clarion

2006 Clarion Product Application Guide V1.1

Guide Overview

WELCOME TO CLARION!

This Sales and Application Guide provides you with all the information necessary to sell and install the entire Clarion product line. Clarion has been a driving force in the mobile electronics industry for over 50 years. At Clarion, research and development has always played a key role decade after decade. Our worldwide engineering team is responsible for many technological innovations that have influenced the entire car audio industry. Clarion products are designed to satisfy not only the casual listener, but the discerning audiophile as well.

CLARION CORPORATION OF AMERICA DEALER TECH HOTLINE 800-366-4567

CLARION CANADA INC. DEALER TECH HOTLINE 905-829-4600 800-668-5612

As part of the Clarion dealer network, you are able to offer your customers car audio components unparalleled in quality and value. We not only provide the right products, but also the necessary support services.

The Dealer Technical Hotline is available to all authorized Clarion dealers for installation and technical questions. It is manned by Clarion experts from 8:30 EST to 5:00 PM, Monday through Friday. A voice mail system is available to leave a message during non-business hours and weekends.

ONLINE WIRING, OWNERS AND INSTALLATION MANUALS AND PRODUCT INFORMATION WWW.TEAMCLARION.COM

Wiring diagrams are available 24 hours a day, seven days a week from the www.teamclarion.com web site. Also available online are owner's manuals, FAQs, product images, Display board tags, and onLine order entry.

CONTENT AND ACCURACY

Clarion makes every effort to ensure the accuracy and detail of the information contained within this Product Application Guide.

However, due to continuous improvements and availability of information, the content of this binder may need to be updated throughout the year. The most recent and accurate version of the binder can always be found online at www.teamclarion.com.

Quality Control

Clarion products have long been recognized as being extremely reliable. Quality control is an essential ingredient for reliability. During manufacturing, products are tested at every stage – from first prototype, through various stages of production, to the finished product. They are subjected to a battery of tests ranging from vibration, shock, temperature fluctuation, moisture, and other elements. Clarion's attention to quality control has earned an ISO 9002 Certification, the highest in the industry.

Research And Development

Clarion has maintained a strong research and development program ever since the company's founding in 1947. By keeping ahead of the industry with new innovations, Clarion has been able to offer "leading edge" products for discerning audiophiles the world over. Clarion maintains research facilities around the world. Three main laboratories in Japan include product development, product engineering, and semi-conductor research. In the United States, Clarion has a Technical Support Service Center, as well as the North American Product Planning Department, based at the Gardena (California) Corporate Office Complex. The staff of engineers in Gardena work closely with engineers in Japan for product development in both OEM and aftermarket products.

Clarion Firsts in the Industry

- First car radio in Japan (Model A-214 – 1948)
- First audio equipment supplier to Japanese auto makers (Renault Motor Co. – 1953)
- First fully-transistorized car radio in the world (1959)
- First car stereo set in Japan (CA-802 – 1963)
- First cassette car stereo set in Japan (PE-801 – 1968)
- First auto-reverse car cassette player in the world (PE-666 – 1971)
- First car radio FM impulse noise suppressor in Japan (CZ1 – 1978)
- First car graphic equalizer booster in the world (EQB – 1978)
- First AM noise-suppressing IC in the world (CZ2 – 1979)
- First motorcycle radio set in the world (Honda Motor – 1980)
- First DAT player for the car in the world (DAC2000 – 1984)
- First combination AM/FM, CD changer-controller, and cellular telephone to operate by voice recognition (CAL-1000 – 1992)
- First active digital control system (ADCS-1 – 1993)
- First car multimedia system (TTX7101/VMA9181 – 1995)
- First in-car computer/audio system (Clarion Auto-PC – 1998)
- First in-dash integrated multi-zone DVD/MP3/CD/Tuner/Navigation system (Clarion Joyride – 2002)
- First half-DIN in-dash powered center-channel speaker (SRK5 – 2003)
- First static memory, in-dash digital recorder (DXZ845MC Music Catcher System – 2003)
- First Fully transportable Navigation and Entertainment system (NICE - 2005)

Multimedia

Complete Line-up of Multimedia Products

VRX765VD 1-DIN In-Dash 7" Fully-Motorized LCD Monitor with DVD Player and Integrated iPod control

The VRX765VD is a motorized flip-down 7" monitor with a fully detachable faceplate with integrated iPod Video control with the industries best, fully graphical interface. The VRX765VD boasts a true single-DIN chassis (no hideaway box) for easier installation. The unit also offers aesthetically in that it sports an attractive piano-like finish on the face plate.

MAX675VD 2-DIN In-Dash 7" Fully-Motorized LCD Monitor with DVD Player and Integrated iPod control

The MAX675VD compliments the VRX765VD with a nearly identical feature set, including the industries only iPod Video interface and our world reknowned touch-screen graphical control. The MAX675VD also features connectivity with the new NAX970HD, a HDD based navigation system. This combination of features and performance can't be beat!

iPod Video Connectivity

Clarion remains the industry leader in iPod connectivity. Our touch-screen based graphical interface has been recognized time and time again as the best, most intuitive iPod connectivity solution in the car audio industry. For 2006, Clarion introduces iPod Video Connectivity to our VRX765VD and MAX675VD. These units will allow users to display iPod video information directly to their in-dash screen.

VCZ625 6-Disc DVD Changer

Load up entertainment for the long haul. Clarion's DVD Changer accepts six discs, so you can keep your passengers smiling with up to six movies, or mix in some of your favorite CDs or MP3s for a change of pace.

Comprehensive Rear-Seat Entertainment Line-up

Clarion's overhead monitors allow rear-seat passengers to enjoy visual entertainment without taking up precious space. The headrest monitors let rear-seat passengers enjoy visual entertainment in the most natural viewing position. Or with a monitor stand or headrest bracket, it is possible to place the screen on an arm rest or other part of the car, increasing viewing possibilities. Clarion also offers a Source Commander A/V switcher and wireless headphones to get the entertainment precisely to the passenger who wants it.

Surround Sound Technologies

5.1-Channel Dolby Digital/dts Surround

Dolby Digital and dts provide three channels of front sound, together with two rear surround channels and a dedicated low frequency channel for a subwoofer. This combination can reproduce the dynamic sound field of a movie theatre in the confined space of the average vehicle.

Dolby Pro Logic II

While standard Dolby Digital and dts require specially encoded software to reproduce 5.1-channel surround sound, Dolby Pro Logic II can create a complete 5.1-channel surround sound effect from ANY 2-channel source. The sound decoding technology can be found in Clarion's DXZ955MP, a high-end source unit featuring Clarion's exclusive AC Processor IV technology.

If your favorite movie is only in stereo, or you are listening to CDs, MP3s or even Sirius Satellite radio, Dolby Pro Logic II will give you a full 5.1-channel surround sound effect. It features a phantom center-channel mode that simulates a center channel, creating a quasi 5.1-channel sound field from just the four standard speakers of a car audio system.

The DVH940 Dolby Digital/dts/Dolby Pro Logic II Processor

The DVH940 incorporates Dolby Digital, dts, and Dolby Pro Logic II processors, a parametric equalizer, crossovers, digital sound field settings and digital time alignment adjustments

The DVH940 processor has selectable crossovers for the front, centre, rear and subwoofer channels at 50/80/120Hz. To aid in setting proper speaker levels, all channel gains are independently adjustable using a built-in pink noise generator for proper level setting. Along with the adjustable gain settings, the centre and subwoofer channels' volume can also be adjusted separately to allow for different source material.

A built-in 1/3-octave parametric equalizer is also included, allowing for three bands of independent adjustment for the front, rear and centre channel speakers. There are settings for frequency, gain, and Q (how the slope of the adjusted frequency is affected). Either pink noise or audio material can be used to set the EQ.

Also included are seven different DSP surround settings (such as Club, Theatre, etc.) to help create a bigger sound stage, as well as a digital time alignment option to set speaker delays to compensate for sonic discrepancies caused by the vehicle's interior.

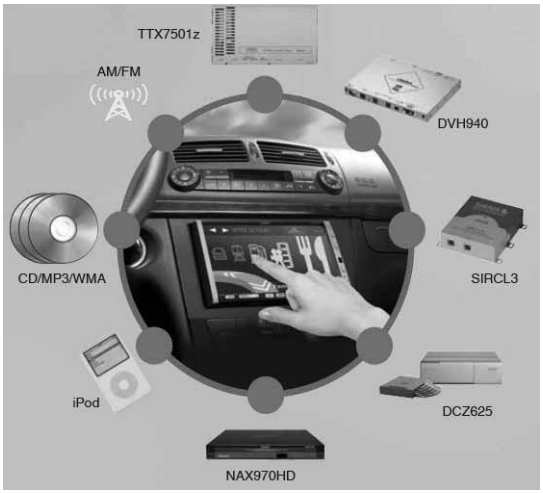
The DVH940 also includes Dolby Pro Logic II decoding. Dolby Pro Logic II is the first processor to produce 5.1 surround sound from ANY stereo source, including FM, CD, MP3 or VHS movie audio tracks. Now you can experience true "you are there" audio performance. Dolby Pro Logic II in the DVH940 generates front, center, surround, and subwoofer outputs for a true mobile surround sound system.

For audiophile sound quality, the DVH940 uses 24-bit D/A converters for low distortion audio and delivers the 5.1 surround signals through 4-volt, 6-channel RCA line-level outputs.

Expandibility

CeNET Technology

CeNET is an exclusive Clarion feature that easily allows system upgrades and expansion without complicated wiring or programming. Start with the VRX765VD, an in-dash DVD player with a motorized 7-inch LCD or the MAX675VD 2-DIN in-dash DVD player with a 7.0" LCD Screen - CeNET allows for the seamless integration of Clarion's VCZ625 (DVD changer), DVH940 (5.1-channel surround sound processor), TTX7501Z (TV tuner), DCZ625 (CD Changer) or the SIRCL1 (Sirius Satellite Receiver). CeNET can run up to two changers (audio and DVD) using the CCA519 CeNET "Y" adapter cable.

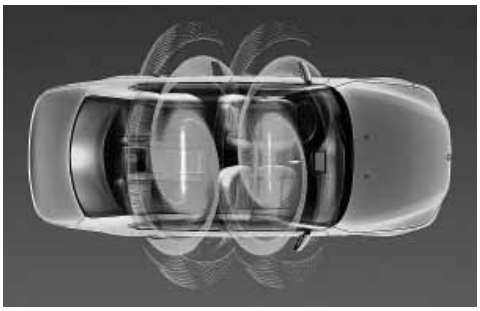


CeNET components will display functions on the main viewing screen, such as CD titles, Sirius Satellite Radio channel information, and radio or TV station names that you program into the system, as well as MP3 ID3 tags (on units that read MP3 files).

CeNET features balanced audio transmission. This technology, taken from the pro-sound industry, provides excellent noise rejection, making the CeNET system virtually noise free. All audio signals and power/trigger wires are in the CeNET cable, eliminating the need for separate runs of RCA cables or power wires, making the installation much easier.

True 2-Zone Entertainment

The VRX765VD and MAX675VD allow a rear-seat passenger, to view different programming, such as a DVD or an external video source, a game system or a VCR. In this mode, the front passengers can enjoy the radio, a DVD movie, or MP3s independently from the rear seat passengers. The rear seat passengers can listen to the audio through wireless headphones.



Additional Video Inputs in Multimedia units

The VRX765VD and MAX675VD are equipped with an audio/video input. Clarion offers several different audio/video sources to choose from, from TV tuners, single-DIN DVD player, 6-disc DVD changer and rear vision camera. For those looking for additional entertainment, a video game console could be added as well.

A/V Outputs for system expansion

The VRX765VD and MAX675VD both feature an Audio/Video output connection on the rear of the unit. This allows additional monitors/displays to be used for elaborate multimedia systems. Any time you need to split the video signal to drive multiple additional monitors, a VA700 Video Distribution Amplifier must be used or video signal quality will suffer dramatically.

Navigation Ready

The MAX675VD features a RGB/Control connector to allow the new NAX970HD HDD-based Navigation system to interface with the head unit. This will provide users with graphic-rich intuitive navigation capability with seamless integration.

Multimedia – Technologies

Video Performance

High-Resolution LCD Screens

All Clarion display screens use the latest in active matrix LCD technology to give you the brightest, most detailed image available. Thin Film Transistors (TFT) are attached to each RGB, (red/green/blue) pixel to provide more control over the color being reproduced. This method helps reduce display “white-wash” associated with a conventional passive-matrix screen, and insures optimal picture quality from any viewing angle.

Clarion video monitors utilize high-resolution active matrix screens. By employing a “striped pixel configuration” to align RGB pixels into columns, we can use more pixels to enhance details and provide better color definition. Having the controls for brightness on the front panel allows easy adjustment of picture quality.

Display Resolution

The VRX765VD and MAX675VD feature a screen resolution of 1440 x 234 pixels for a total of 336,960 pixels. Some companies try and confuse you by describing the number of picture elements - each of the red, green and blue picture elements. By their standards, these units would have 1,010,880 picture elements. When comparing video displays, make sure the specifications you are comparing are using the same format.

Design and Interface

Touch-Panel Operation

With the VRX765VD and MAX675VD, you can enjoy touch-screen control of all major system functions. Both units can control audio, radio, DVD/CD Changer and TV, Sirius Satellite Radio and even 5.1-surround sound settings when linked to the DVH940.

Fully Motorized In-Dash 7-Inch Monitor on the VRX765VD

The VRX765VD features a large 7-inch monitor with a fully motorized mechanism that opens and closes at a touch of a button. The tilt angle and distance from the dashboard to the screen can be adjusted for maximum visibility. The monitor will also remember the setting when used the next time.

Partial DCP

The control button section can be detached with a release button for your protection against theft. On the VRX765VD, the screen automatically closes when you detach the face panel for safe storage.

Motorized In-Dash 7-Inch Monitor on the MAX675VD

The MAX675VD Double-DIN unit features a 7.0-inch TFT LCD monitor with a fully motorized mechanism that allows access to the DVD/CD slot.

Audio Performance

3-Band Parametric Equalizer
Clarion's VRX765VD and MAX675VD feature a 3-band Parametric equalizer for advanced tuning of audio system performance. The Parametric EQ allows for control over bass, midrange and treble adjustment frequencies, as well as the Q-factor (range of frequencies the cut or boost effects) and the amount of cut or boost applied to the signal. Parametric equalizers offer excellent phase response as compared to graphic equalizers, resulting in a better sounding audio system.

Magna Bass EX
The Magna Bass EX feature of the VRX765VD and MAX675VD offers the low frequency improvement of the common 'loudness' feature without making the bass sounding muddy or boomy. Magna Bass EX boosts at 50Hz instead of the common 100Hz for a tighter, more controlled sound without boominess or emphasis in the midrange.

24-Bit Digital-to-Analog Converter
Clarion's 24-bit D/A converter in the VRX765VD and MAX675VD eliminates the signal defects of older 1-bit and 16-bit decoding by actually "oversampling" the digital signal. This greatly improves overall sound quality of the D/A converter, creating a more natural sound and better imaging and staging. A 24-bit D/A converter greatly reduces linearity errors and notch distortion, which results in superior sound and high signal-to-noise ratios for less reproduced noise.

Half-DIN Center-Channel Speaker

Clarion offers a unique concept in 5.1 surround center-channel speakers: a half-DIN application that makes installing a center channel speaker a snap.

With its included outboard amplifier, the SRK5 can be added to any system with ease. When used with a the VRX765VD or MAX675VD and DVH940 surround processor or the DXZ955MC in Pro Logic II mode, the SRK5 offers an inexpensive and efficient way of adding a dedicated center channel speaker.

The SRK5 was designed to fit into 1/2-din EQ pocket openings found in many installation kits.

Rear-Seat Entertainment

Wide-Screen Flip-Down Color LCD Monitors
Two new OHM overhead video screens are available this year: the OHM156 (15.3" widescreen monitor), OHM106 (10.2" widescreen monitor). These compliment the OHMD102 10.2" flip-down with integrated DVD player that features CD/CD-R/RW/DVD/MP3 playback.

Sharing common features, each overhead monitor offers multi-picture formats (16:9/4:3), and a high-resolution TFT (Thin Film Transistors) active-matrix display to ensure the clearest and brightest pictures available. The overheads also offer easy adjustment of color, tint, brightness and dimmer functions, multiple A/V inputs (four inputs on the OHM156 and OHM106 and one on the OHMD102), one video output, an external A/V game port, and IR audio transmitters for wireless headphones. Each monitor also touts a built-in IR receiver, which allows you to pass an IR control signal through to a source unit such as the TTX005. Choosing from our extensive list of stand-alone video source options such as the TTX005 (TV Tuner), VS755 (DVD player), CK525E (rear-view camera) or the VCZ625 (DVD Changer), you can create an extensive A/V system without altering the factory source unit.

Screen Technology
All Clarion video monitors utilize high-resolution video-grade active matrix screens. By employing a "stripped pixel" configuration to align RGB pixels into columns, more pixels are used to enhance the details and provide better color definition. TFT's are attached to each RGB (red/green/blue) pixel to provide more control over the color being reproduced. This method helps reduce "white wash" associated with conventional passive matrix screens.

Screen Resolution
The Clarion OHM156 and OHM106 overhead monitors boast impressive screen resolutions. The OHM106 offers 1.2 Million pixels and the OHM156 offers a stunning 3.1 Million pixels - it looks like a little Plasma display.

Wide-Screen Headrest Color LCD Monitors
New this year are two LCD video monitors for headrest installations. The VMA7196/VMA5096 7" and 5" wide-screen monitors also have many of the unique features found in the overhead models, such as a high-resolution, TFT (Thin Film Transistors) active-matrix displays, two A/V inputs, an external A/V game port, and two-channel IR audio transmitters for use with the optional WH204 wireless headphones.They both include a slim, easy-fit universal mounting bracket for use in variety of installations.

Multi-Zone Systems

Clarion's multi-zone products allow the ultimate in system design and flexibility. The MSS430 "Source Commander" is a combination audio and video switcher with a built-in video distribution amplifier for excellent video performance on up to three LCD monitors. Its four audio inputs have individual gain controls to match audio source levels. It can accept up to four different audio/video sources (Example: DVD, VHS, TV tuner, video game, rear vision camera, or video camera) and send the audio and video to any of three monitors independently.

The possibilities are endless. And by using our wireless headphones, installation is a breeze. With multi-source switching, any one of four audio/video sources can be selected independently for each video monitor. For example, each back seat or overhead monitor can have its own audio/video program, controlled from a wired remote control station. The line level output can feed any of our WH104/WH204/WH105 wireless headphones, or the AUX inputs on any source unit or equalizer.

Accessories to Make Your Multimedia System Complete

Video Mounting Accessories

Clarion has the video accessories to complete or complement any video system. Since vehicle leasing has often been the excuse why rear seat entertainment is overlooked, Clarion has several optional video mounting accessories. These accessories do not require any modifications to the vehicles interior, and no holes need to be drilled for mounting. The ZMT100 is a pedestal mount that can be attached with double sided tape to the center console or dashboard. The PQE023 attaches to the headrest bars of the seat. And the ZMT009, an adjustable goose neck mount, can be attached to a seat bolt. A leased vehicle will no longer be an excuse for not having rear seat entertainment.

Video Amplifier

In video applications when a single video source is used with multiple monitors, the VA700 video amplifier prevents video signal loss. When the video is split to to many monitors using y-cables, the signal is weakened and picture quality is lost. The VA700 allows a single video source to be used with up to seven monitors while retaining excellent picture quality.

Any time multiple monitors are used with a single video output, a VA700 should be used.

Rear Vision Camera

Clarion has thought of it all, including a rear vision camera. This camera can be used to reduce blind spots often associated with SUVs or motor homes. The camera can be also used to aid in backing up or parallel parking. The camera's iris can make darkness look like daylight, allowing the camera to be used at all times of the day or night. With quality construction of Clarion rear vision camera, it can withstand what ever Mother Nature can throw at it.

TV Tuners and Antennas

To complete the multimedia line-up, Clarion has TV tuners and matching antennas. The antennas offer the best possible reception with glass mount amplified diversity antennas. With the complete line-up of multimedia products and accessories, Clarion has something to satisfy everybody.

Multimedia – MAX675VD Information

MAX675VD

2-DIN DVD MULTIMEDIA STATION WITH TOUCH PANEL CONTROL

- Fully Motorized Sloping 7-Inch LCD Panel
- 24-Bit D/A Converters (96kHz)
- Touch Panel control with soil-resistant finish
- iPod Control with on-screen iPod Video Display
- On-screen DVD Menu Navigation
- 3-Band Parametric Equalizer
- DVD+R/RW, DVD-R/RW Ready
- CD, CD+R/RW, CD-R/RW Ready
- Plays MP3 and WMA Audio Files
- CeNET control of: DVD Changer (easy), 5.1 Channel Processor, TV Tuner, 6-Disc CD Changer, Satellite Radio receiver.
- 1 A/V Output
- 1 A/V Input
- 6-Channel RCA Line Level Output
- 200W amplifier (50W x 4)
- 2-Zone entertainment
- Radio tuner with 18FM/6AM presets
- Built-in Amp Canceller
- Control for optional NAX970HD Navigation System

General Specifications

Power Requirement:	11 - 15 V
Current Consumption:	TBA
Weight:	TBA
Dimensions (w x h x d):	TBA

DVD/CD Specifications

Frequency Response:	TBA
S/N Ratio:	TBA
Dynamic Range:	TBA
Distortion:	TBA
Video System:	Standard NTSC

Audio Input/Output Specifications

Audio Input Voltage:	TBA
Audio Output Voltage:	TBA
Video Input Voltage:	TBA
Video Output Voltage:	TBA

LCD Screen Specifications:

Screen Size:	7"
Pixels:	TBA
Resolution:	TBA

Audio Amplifier Specifications

Rated Power Output:	18W x 4 CEA-2006
Maximum Power Output:	50W x 4
Minimum Speaker Impedance:	4 Ohms

FM Tuner Specifications:

Frequency Range:	87.9 - 107.9 MHz
Usable Sensitivity:	TBA
50dB Quieting:	TBA
Alternate Channel Selectivity:	TBA
Stereo Separation:	TBA
Frequency Response:	TBA

iPod cable (Audio Only)	CCA649 or CCA670
iPod Video cable (Audio and Video)	CCA673

Multimedia – VRX765VD Information

VRX765VD

1-DIN DVD MULTIMEDIA STATION WITH TOUCH PANEL CONTROL

- Fully Motorized 7-Inch LCD Panel
- 24-Bit D/A Converters (96kHz)
- Touch Panel control with soil-resistant finish
- iPod Control with on-screen iPod Video Display
- On-screen DVD Menu Navigation
- 3-Band Parametric Equalizer
- DVD+R/RW, DVD-R/RW Ready
- CD, CD+R/RW, CD-R/RW Ready
- Plays MP3 and WMA Audio Files
- CeNET control of: DVD Changer (easy), 5.1 Channel Processor, TV Tuner, 6-Disc CD Changer, Satellite Radio receiver.
- 1 A/V Output
- 1 A/V Input
- 6-Channel RCA Line Level Output
- 200W amplifier (50W x 4)
- 2-Zone entertainment
- Radio tuner with 18FM/6AM presets
- Built-in Amp Canceller

General Specifications

Power Requirement:	11-15V
Current Consumption:	4.0A @ 1W

DVD/CD Specifications

Frequency Response:	10 Hz to 20 kHz
Dynamic Range:	100 dB
Distortion:	0.01%

Audio Input/Output Specifications

Audio Input Voltage:	1.0 V
Audio Output Voltage:	2.0 V
Video Input Voltage:	1.0 V
Video Output Voltage:	1.0 V

LCD Screen Specifications:

Screen Size:	6" x 3-5/16"
Pixels:	336,960
Picture Elements:	1,010,880
Resolution:	1440 x 234 x 3

Audio Amplifier Specifications

Rated Power Output:	19W x 4 CEA-2006
Maximum Power Output:	50W x 4
Signal to Noise Ratio	75 dBA
Minimum Speaker Impedance:	4 Ohms

FM Tuner Specifications:

Frequency Range:	87.9 - 107.9 MHz
Usable Sensitivity:	9 dBf
50dB Quieting:	15 dBf
Alternate Channel Selectivity:	70 dBf
Stereo Separation:	35dB
Frequency Response:	30 Hz to 15kHz

iPod cable (Audio Only)	CCA649 or CCA670
iPod Video cable (Audio and Video)	CCA673

Multimedia – NAX670HD/OHM156

NAX970HD

HARD DRIVE NAVIGATION SYSTEM

- Voice recognition
- Touch Panel integration
- Audible voice commands in English, French and Spanish
- 30GB Mobile High Speed Hard Drive
- Built-In Gyro Sensor
- Simple Destination Input with Touch Screen and predictive key-board entry
- Comprehensive point of interest database
- Automatic Route Recalculation
- Front Panel USB 2.0 Port for Map upgrades
- Compatible with MAX657VD

OHM156

THIN, 15.4" WIDE-SCREEN, FLIP-DOWN, COLOR LCD MONITOR

- Easy-Fit Universal Metal Mounting Bracket
- WVGA TFT Active Matrix Display With 16:9/4:3 Format
- On-Screen Display (OSD)
- Picture-In-Picture (PIP)
- Adjustable Split Screen for Dual IR Audio and Video Viewing
- Dual IR Audio Output for WH204H Wireless Headphones (One WH204H Included)
- Front-Panel Accessible Picture Adjustment Controls
- Four A/V Inputs
- One A/V Output
- Convenient External A/V Game Port (Included)
- Lightweight Plastic Housing
- Remote Control
- FM Modulator control cable (for optional FM Modulator)
- Built-in Dome Lights

Specifications

Power Requirement:	11-16V V
Current Consumption:	1.8 A
Brightness Level:	350
Viewing Angle:	L/R 60/60 degrees U/D 40/55 degrees
Pixels:	3.1 Million

General Specifications

LCD Type:	Color TFT, Active-Matrix
Screen Size:	15.4"
Weight:	3.0 lbs
Dimensions (w x h x d) closed	15.25" x 13" x 2"
Dimensions (w x h x d) open	15.25" x 13" x 11.25"
Video System:	NTSC/PAL

OHM106

THIN, 10.2" WIDE-SCREEN, FLIP-DOWN, COLOR LCD MONITOR W/ PICTURE-IN-PICTURE

- Easy-Fit Universal Metal Mounting Bracket
- WVGA TFT Active Matrix Display With 16:9/4:3 Format
- On-Screen Display (OSD)
- 4 A/V Inputs
- 1 A/V Output
- Convenient External A/V Game Port (Included)
- Lightweight Plastic Housing
- Dual IR Audio Output for Wireless Headphones (One WH204H Included)
- FM Modulator Control Cable (for Optional FM200)
- Remote Control
- Built-in Dome Lights

Specifications

Power Requirement:	11-16V V
Current Consumption:	1.5 A
Brightness Level:	350
Viewing Angle:	L/R 60/60 degrees
	U/D 40/55 degrees
Pixels:	1.2 Million

General Specifications

LCD Type:	Color TFT, Active-Matrix
Screen Size:	10.2"
Weight:	2.8 lbs
Dimensions (w x h x d) closed	10.75” x 9.25” x 1.75”
Dimensions (w x h x d) open	10.75” x 9.25” x 8.25"
Video System:	NTSC/PAL

OHMD102

THIN, 10.2" WIDE-SCREEN, FLIP-DOWN, COLOR LCD MONITOR W/ BUILT-IN DVD PLAYER

- Plays CD, CD-R, CD-RW, DVD, and MP3 Formats
- Easy-Fit Universal Metal Mounting Bracket
- TFT Active Matrix Display With 16:9/4:3 Format
- On-Screen Display (OSD)
- One A/V Inputs
- One Video Output
- Convenient External A/V Game Port (Included)
- Lightweight Plastic Housing
- IR Audio Transmitter for Wireless Headphones (Two-Piece WH104 Included)
- Front-Panel Accessible FM Modulator and Picture Adjustment Controls
- FM Modulator Control Cable (Included for Optional FM200)
- Remote Control
- Built-in Dome Lights

Specifications

Power Requirement:	11-16V
Current Consumption:	1.5 A
Brightness Level:	350
Viewing Angle:	L/R 60/60 degrees
	U/D 40/55 degrees
Pixels:	336,960
Resolution:	1,440 x 234

General Specifications

LCD Type:	Color TFT, Active-Matrix
Screen Size:	10" (Measured Diagonally)
Weight:	3.2 lbs
Dimensions (w x h x d):	9.75” x 9.25” x 2”
Video System:	NTSC/PAL

Multimedia – VMA7196/VMA5096

VMA7196

7" WIDE-SCREEN HEADREST COLOR LCD MONITOR

- Slim, Easy-Fit Universal Mounting Bracket (Included)
- TFT Active Matrix Display With 16:9/4:3 Format
- On-Screen Display (OSD)
- Two A/V Inputs
- Built-In Dual IR Audio Transmitter for (Optional) WH204 Headphones
- Built-In IR Receiver for pass-through
- Front Panel Controls for Power, Source, and Picture
- Auto Turn-On/Off with Ignition

Specifications

Power Requirement:	11-16V
Current Consumption:	0.6 A
Pixels:	336,960
Picture Elements:	1,010,880
Resolution:	1,440 x 234 x 3
Video input level (RCA)	1.0V p-p
Video Format	NTSC / PAL
LCD Type:	Color TFT, Active Matrix
Screen Size:	7"
Weight:	0.76 lbs
Dimensions (w x h x d):	7-1/8 x 5-3/16" x 1-1/16"
Mounting Dimensions:	8" x 6" x 1"

VMA5096

5" WIDE-SCREEN HEADREST COLOR LCD MONITOR

- Slim, Easy-Fit Universal Mounting Bracket (Included)
- TFT Active Matrix Display With 16:9/4:3 Format
- On-Screen Display (OSD)
- Two A/V Inputs
- Built-In Dual IR Audio Transmitter for (Optional) WH204 Headphones
- Built-In IR Receiver for pass-through
- Front Panel Controls for Power, Source, and Picture
- Auto Turn-On/Off with Ignition

Specifications

Power Requirement:	11-16V
Current Consumption:	0.6 A
Pixels:	211,200
Picture Elements:	633,600
Resolution:	1440 x 234 x 3
Video input level (RCA)	1.0V p-p NTSC
Video Format	NTSC / PAL
LCD Type:	Color TFT, Active Matrix
Screen Size:	5"
Weight:	0.76 lbs
Dimensions (w x h x d):	5-3/8" x 4-1/8" x 1-1/16"
Mounting Dimensions:	7-1/8" x 5-3/8" x 1"

VCZ625

6-DISC DVD/CD/CD VIDEO/MP3 CHANGER

- CeNET Slave or Stand Alone Operation
- 6-Disc DVD Mechanism Plays: DVD Video, CD Audio, CD Video, MP3 Encoded CD-R/RW, and dts Audio CD
- 24-Bit D/A Converter
- CD Text (Audio CD)
- Fiber-Optic Output for Use with DVH940 5.1 Dolby Digital/ dts Decoder/Processor
- 2-Channel RCA Line-Level Outputs for Stand Alone Use
- Automatic 2-Channel Mix Down of 5.1 Dolby Digital, dts, and dts CD Audio
- RCA Composite-Video Output x 2
- Remote IR Eye
- Includes 16' CeNET Cable and 16' A/V Cable (for stand alone use)
- IR Remote Control

General Specifications

Power Requirement:	11-16V
Current Consumption:	Less than 3.0 A
Weight:	3.5 lb
Dimensions (w x h x d):	9-3/8" x 3-3/8" x 7-1/2"

DVD Specifications

Format:	DVD-Video Disc (Two Layer, Two Side)
Video System:	Standard NTSC
Audio System:	MP3 I, MP3 II

Video Specifications

Output Level:	1.0 V, 75 ohms
Video System:	16:9 Letter Box, 4:3 Pan Scan

Audio Specifications

Maximum Output:	1.8 V
Frequency Response:	20 Hz to 20 kHz
S/N Ratio (A-wtd):	90 dB
Separation:	80 dB

VS755

1-DIN IN-DASH DVD/CD/MP3 PLAYER

- One-DIN In-Dash DVD Player
- Plays DVD Video, CD Audio, and MP3 Encoded CD-R/RW
- CD-R/CD-RW Playback
- Adjustable Audio Gain Controller
- 2 A/V inputs (including front panel)
- 1 A/V Output
- 24-Bit D/A Converter
- IR Remote Control
- ID3 Tag for MP3 Titles

General Specifications

Power Requirement:	11-16V
Current Consumption:	Less than 3.0 A
Weight:	3.5 lb
Dimensions (w x h x d):	7" x 2" x 6-5/8"

DVD Specifications

Format:	DVD-Video Disc (Two Layer, Two Side)
Video System:	Standard NTSC
Audio System:	MP3 I, MP3 II
Mounting Angle:	0 to +/- 30 degrees

Video Specifications

Output Level:	1.0 V, 75 ohms
Video System:	16:9 Letter Box, 4:3 Pan Scan
Video Input Terminal:	0.5 - 2.0 V, 75 ohms

Audio Specifications

Maximum Output:	1.0 V
Frequency Response:	20 Hz to 20 kHz
S/N Ratio (A-wtd):	85 dB
Separation:	>70 dB

Multimedia – DVH940/DVC920 Information

DVH940

5.1 DOLBY DIGITAL/DTS/PRO LOGIC II AUDIO PROCESSOR

- CeNET Slave or Stand-alone (when used with DVC920) Hide Away Processor
- Decodes Dolby Digital, dts, dts Audio CD, and Dolby Pro Logic II
- Directly Controlled by VRX935VD, VRX745VD, DXZ945MP, DXZ745MP, VRX925VD, VRX755VD, VRX765VD, MAX675VD,
- Six Pre-Programmed Digital Sound Field Memories
- Individually-Adjustable Speaker Gains (LF, RF, C, LR, RR, and SW)
- Independent, 3-Band, Parametric EQ for Front, Center, and Rear Channels
- 50/80/120 Hz Selectable, High-Pass Crossover for Front, Center, and Rear Channels
- 50/80/120 Hz Selectable, Low-Pass Crossover for Subwoofer
- Speaker Time-Delay Settings
- 24-Bit D/A Converters
- 24-Bit A/D Converters
- 2-Channel RCA Line-Level Analog Input
- CeNET Analog Line-Level Input
- Two Digital Fibre Optic Inputs
- Optional DVC920 Controller For Use With Any Source Unit

General Specifications

Power Requirement:	11-16V V
Current Consumption:	Less than 1.50 A
Dimensions (w x h x d):	6-3/4" x 1" x 9"

Audio Specifications

Frequency Response:	20 Hz to 44 kHz, +/- 1 dB
S/N Ratio:	95 dB (Digital Input)
Distortion:	0.01% (THD + N)
Separation:	80 dB (Digital Input)
Input Sensitivity (RCA):	2 V (low), 1.2 V (mid), 0.6 V (high)
Max Output Voltage:	4 V
Output Impedance:	330 ohms

DVC920

5.1 AUDIO PROCESSOR CONTROLLER

- Connects to DVH940 Processor
- Controls All Functions of DVH940
- Contrast Adjust
- High-Visibility, Multi-Color Display
- Screen-Saver Mode

Multimedia – TTX005/TTX7501z Information

TTX005

STAND ALONE TV TUNER

- IR Remote Control
- Plug-In IR Remote Receiver
- Stereo Audio Output
- Composite Video Output
- Stand Alone Tuner
- 4-Channel Diversity Antenna Input

Specifications

Power Requirement:	11-16V
Current Consumption:	Less than 250 mA
Operational Temperature:	41 to 104 degrees F
Storage Temperature:	-4 to 140 degrees F

General Specifications

Video Output Level:	1.2 V
Audio Output Level:	140 mV
Channels Reception:	2 to 65
Antenna Input:	75 ohms (3.5 mm plugs)
Video System:	NTSC

TTX7501z

TV TUNER FOR CENET

- CeNET Controlled
- Diversity Tuner System
- A/V Input with Optional CCA389 Cable
- One Camera Input
- Two Video Outputs

Specifications

Power Requirement:	11-16V
Current Consumption:	0.5 A or less
VHF Reception Channels:	2 to 13 (54 to 216 MHz)
UHF Reception Channels:	14 to 69 (470 to 806 MHz)
Antenna System:	Four-Input Diversity
Antenna Input:	75 ohms, Unbalanced
Weight:	1.3 lb
Dimensions (w x h x d):	7" x 1" x 6-5/16"
Video System:	NTSC

Multimedia – MSS430/K-CK525E

MSS430

"SOURCE COMMANDER" MULTIZONE A/V SWITCHER

- Multi-Source Switching of Four A/V Sources With Up to Three Different Zones (Monitors)
- Four RCA Composite A/V Inputs
- Three RCA Composite A/V Outputs
- Includes Three Individual Wired Control Stations
- Rear-Camera Reverse-Trigger Input
- Allows for Simple Switching Between DVD, VCR, TV, Video Game, Navigation, and CCD Devices

Audio Specifications

Maximum Output:	4.0 V
Frequency Response:	30 Hz to 25 kHz
S/N Ratio (A-wtd):	60 dB
Input Sensitivity:	1.0 V
Input Impedance:	10k ohms
Input/Output Gain:	0 dB, +/-2dB (maximum volume, 600-ohm load)

Video Specifications

Output Level:	1.0 V
Frequency Response:	39 Hz to 5.5 MHz
Video Input/Output Gain:	0 dB, +/-2 dB (75-ohm load)
Input Sensitivity:	0 V, +/- 20%
Input Impedance:	75 ohms

General Specifications

Power Requirement:	11-16V
Fuse Rating:	1.6 A
Dimensions (w x h x d):	9.84" x 1.06" x 5.24"

Control Station Specifications

Dimensions (w x h x d):	1.70" x 2.60" x 0.60"
Mounting Depth:	0.63" (behind panel)
Mounting Hole Diameter:	1.90" x 2.80"

K-CK525E

REAR VISION COLOR CAMERA KIT

• Reverse Image Color Camera (CC103E) Featuring a Wide-Angle Lens, Weather Resistance Aluminum Case, and Low Light Sensitivity (3 Lux).
• Camera Power Supply With Reverse Trigger Input (CAA188)
• 23' Weather Resistant Camera Cable (MF23RM)

CC1030E (Rear Vision Color Camera)

- Reverse Image Color Camera
- Wide-Angle Lens (115° Wide X 88° Vertical)
- Weather Resistant Aluminum Case
- Low Light Sensitivity (3 Lux)
- High Resolution 1/4" CCD Element
- 250,000 Pixel Count
- Waterproof Mini-Din Connection System
- Operating Temperature: -4°F - 140°
- Dimensions: 1 7/8" (W) X 1 3/8" (H) X 1 3/4" (D)
- 1 Year Warranty

CAA188 (Rear Vision Camera Power Supply)

- Reverse Wire Trigger Input (for use with compatible source units (VRX925VD, VRX935VD)
- Selectable Full-Time Camera Operation
- CCD and Composite Video Output
- Dimensions: 3 5/8" (W) X 1 3/8" (H) X 2 (D)
- 1 Year Warranty

MF23RM (23' Weather Resistant Camera Cable)

- 23' Weather Resistant Insulated Cable
- Waterproof Mini-Din Connection System
- 1 Year Warranty

Multimedia – Accessory/Parts Information

WH104
IR Wireless Headphone System (Two Headphones and Transmitter)

WH104H
Replacement Headphone for WH104

WH204
2-Source Wireless IR headphone System

WH204H
Replacement headphone for the WH204 - including OHMD74 and OHMD102

WH105
RF Wireless headphone system

WH105H
Replacement headphone for WH105

ZCB001
Single-Pole Glass Mount Telescoping Antenna w/F-Connector for TTX001 and TTX005

ZCB003
Single Pole TV Antenna, Outside Glass Mount for TTX7501Z

ZCB303
Single Pole TV Antenna, Outside Glass Mount for TTX7501z

ZCB301
Dipole TV Antenna, Inside Glass Mount for TTX7501Z

ZCP100
Amplified Four-Way Diversity-Antenna System for TTX7501Z

ZCP104
Four-Way Diversity Film Amplified Antenna for TTX7501Z

ZMT100
Universal Pedestal Mount

ZMT009
Gooseneck Monitor Mount

PQE023
Headrest Mounting Arm for Monitors

RCB910
Replacement Remote Control for VDH910

RCB735
Replacement Remote Control for VS735

RCB755
Replacement Remote Control for VS755

RCBD74
Replacement Remote Control for OHMD74

RCBD104
Replacement Remote Control for OHMD102

RCB9300
Replacement Remote Control for VDH9300

RCB9600
Replacement Remote Control for VDH9600

RC300
IR Remote Control for TTX001

CCA389
8-Pin DIN-RCA A/V Adapter Cable for MAX2256, VRX8271, VRX6671z, TVX5653, VRX610, VRX815, VRX925VD, VRX935VD, VRX835, VRX630, and TTX7501Z

CAA357
Stand Alone Adapter Kit for TTX7101 (Includes DIN-RCA Audio Cable); Also Requires RCB062 Kit, IR Sensor

FM200
FM Modulator, Two RCA Channel Inputs, On/Off Switch Included, and Adjustable Modulation Gain

FM700W
Wireless FM Modulator, Two RCA Channel Inputs, On/Off Switch

RCB062
FM Modulator Kit for TTX7101 (Includes FM Antenna Cables and IR Remote)

IR200
Plug-In IR Eye (Included with TTX001)

IRY
Y-Adapter for IR200

VA700
Video Distribution Amplifier (One Input, Seven Outputs)

DCA-005
Fiber-Optic Cable, New Connector on Both Sides, 5 m.

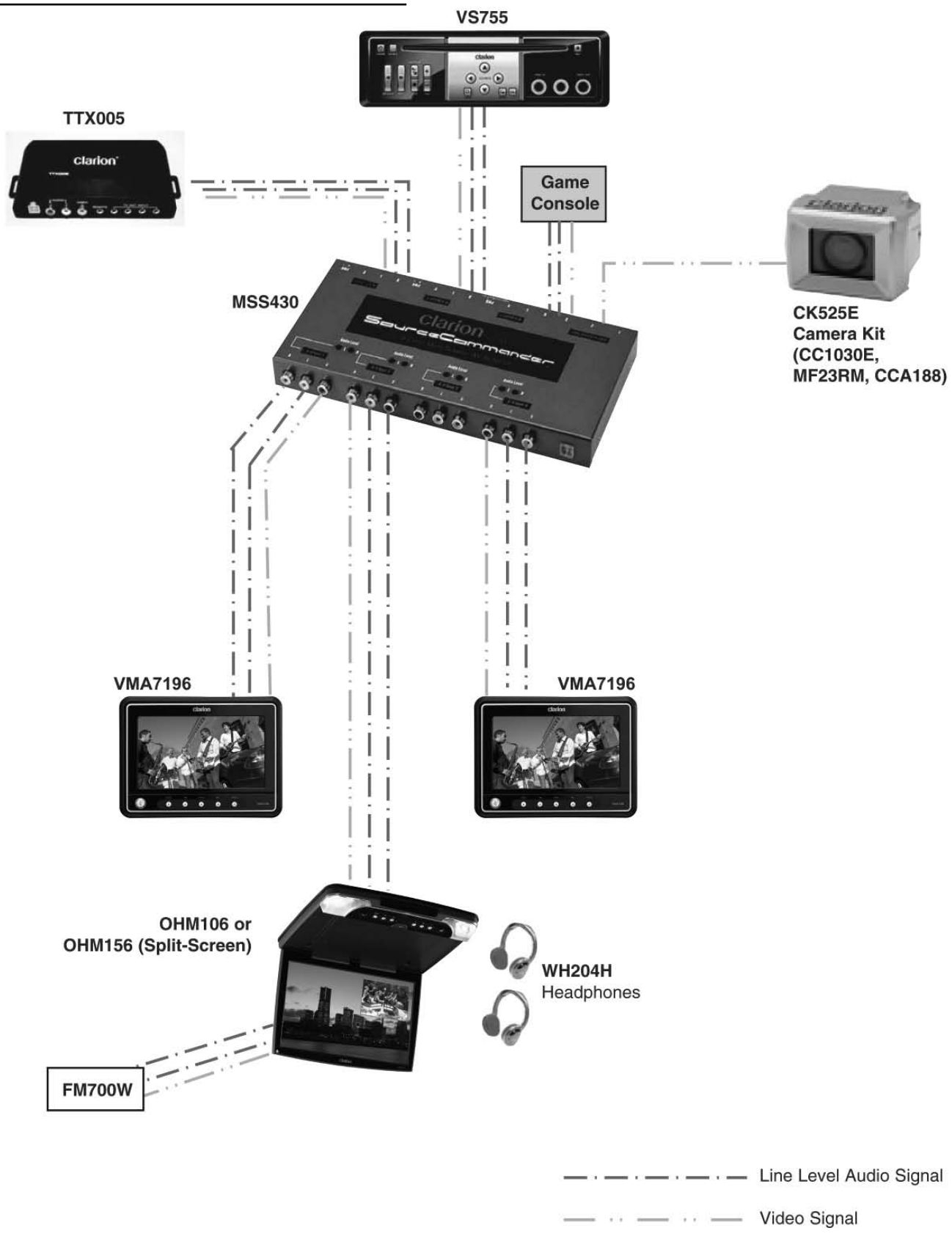
DCA-006
Fiber-Optic Cable, Old Connector on Source Side, New Connector for Black Box DVH940 Processor. Connects DRZ9255 to DCZ625, 5 m.

DCA-007
Fiber-Optic Cable, New Connector on Source Side, Old Connector for DPH910/DVS9755z, 5 m.

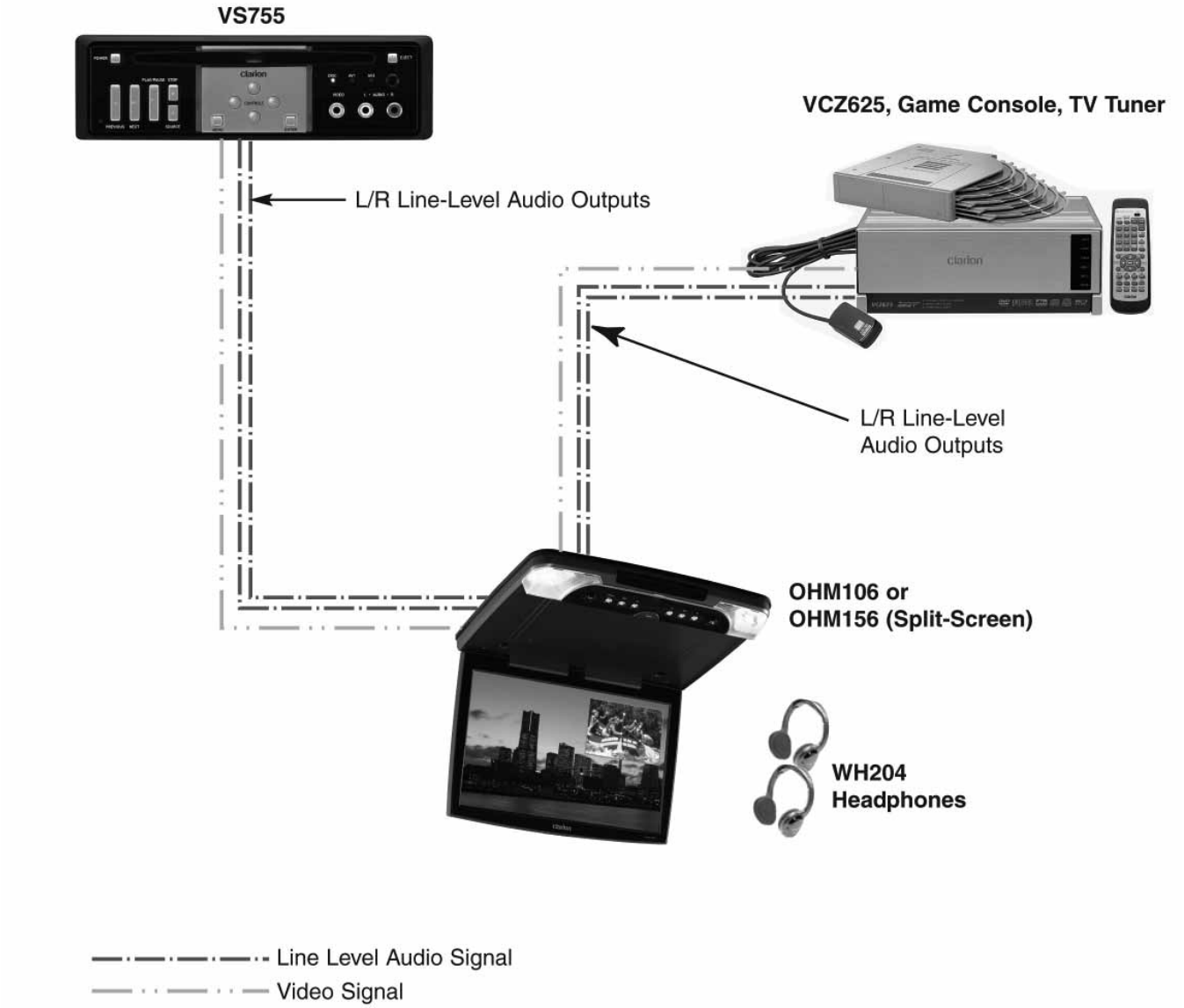
DCA-008
Fiber-Optic Cable, New Connector on Both Sides, 1.5 m

Multimedia - Applications

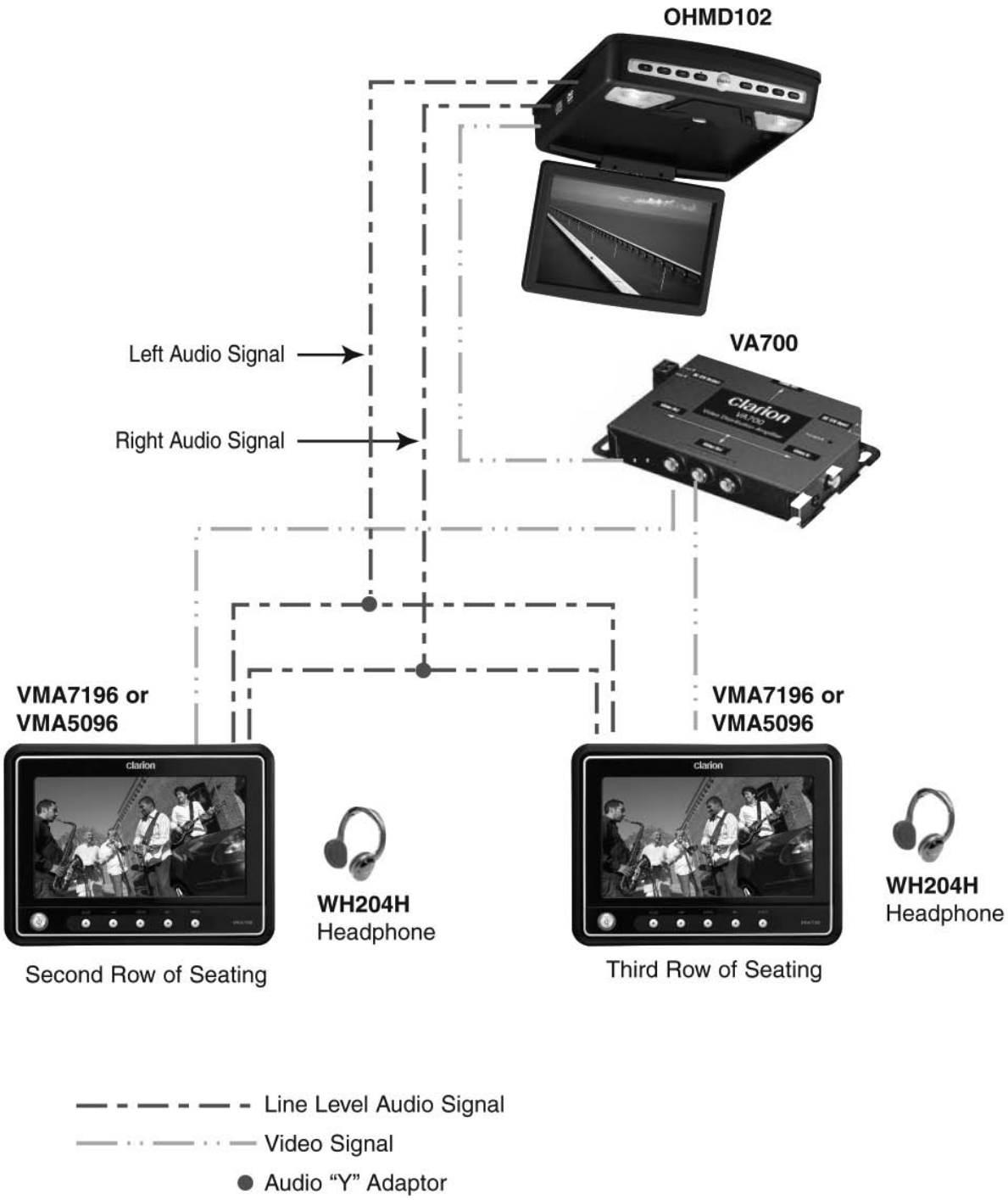
Multi-Zone Video System Diagram



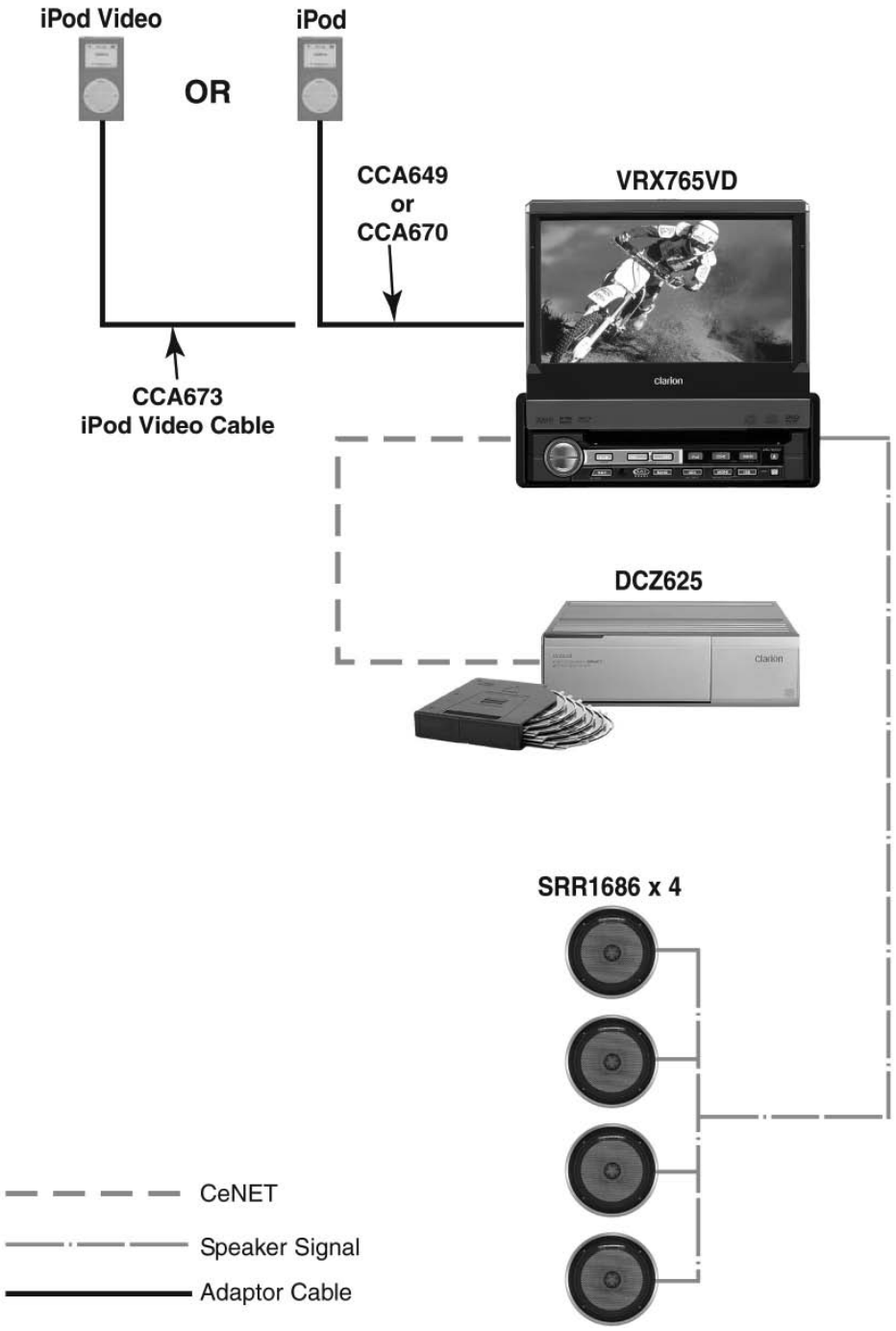
OHM106/OHM156 Split-Screen Multimedia System Diagram



OHMD102 Overhead-Controlled Multimedia System Diagram

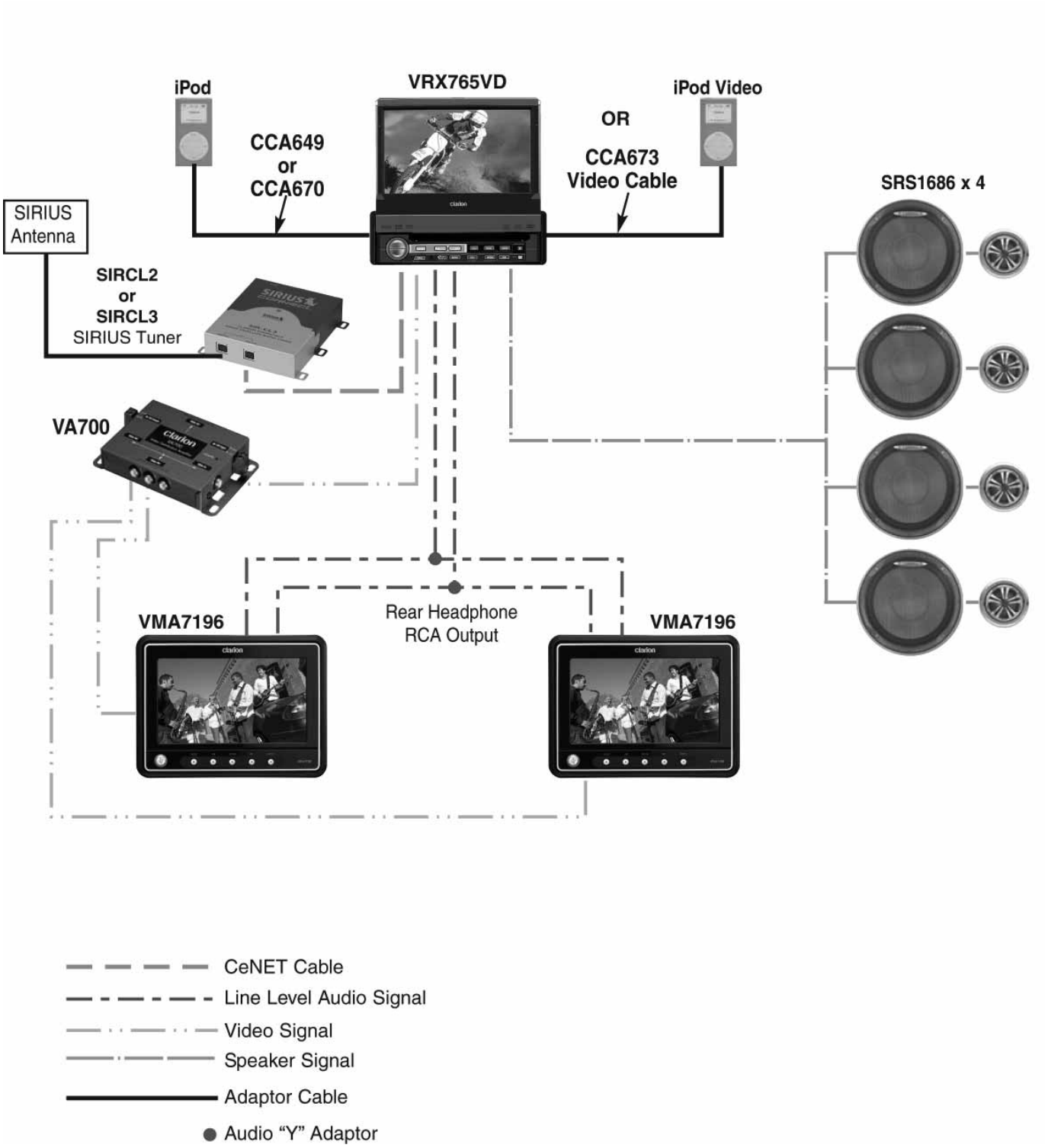


VRX765VD Basic Multimedia System Diagram

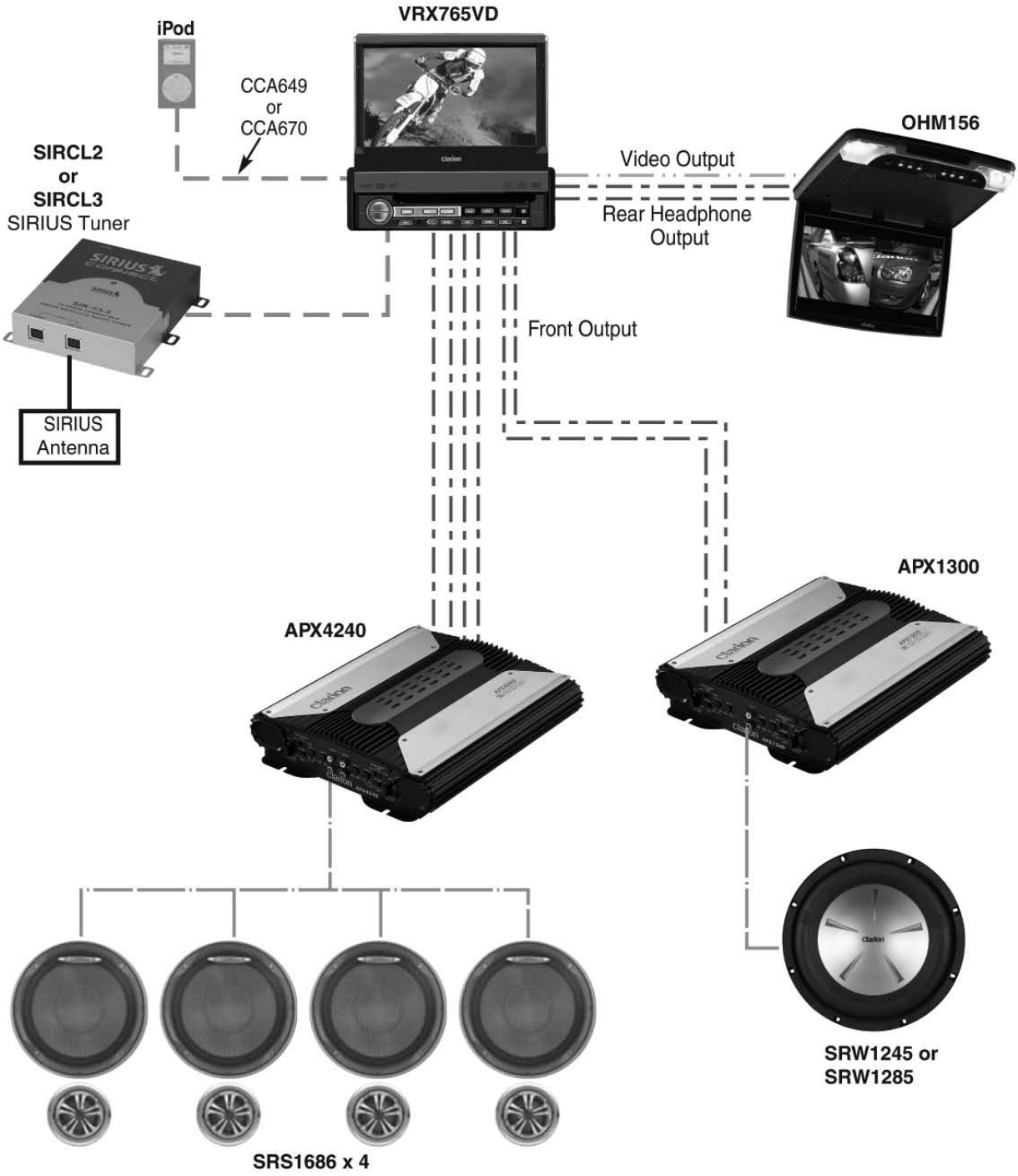


Multimedia - Applications

VRX765VD 2 Zone System Diagram (without Subwoofers)

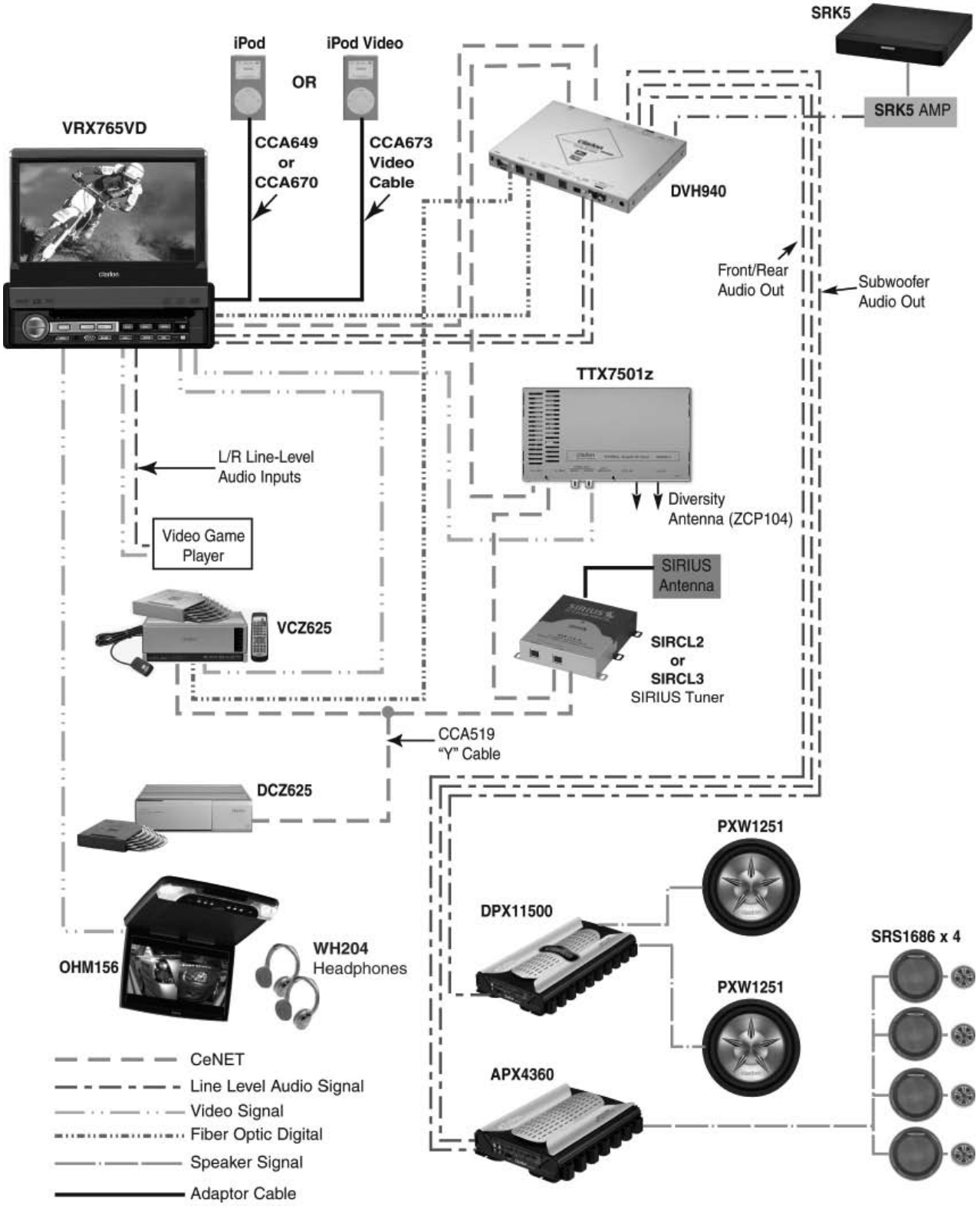


VRX765VD 2 Zone System Diagram (with Subwoofers)

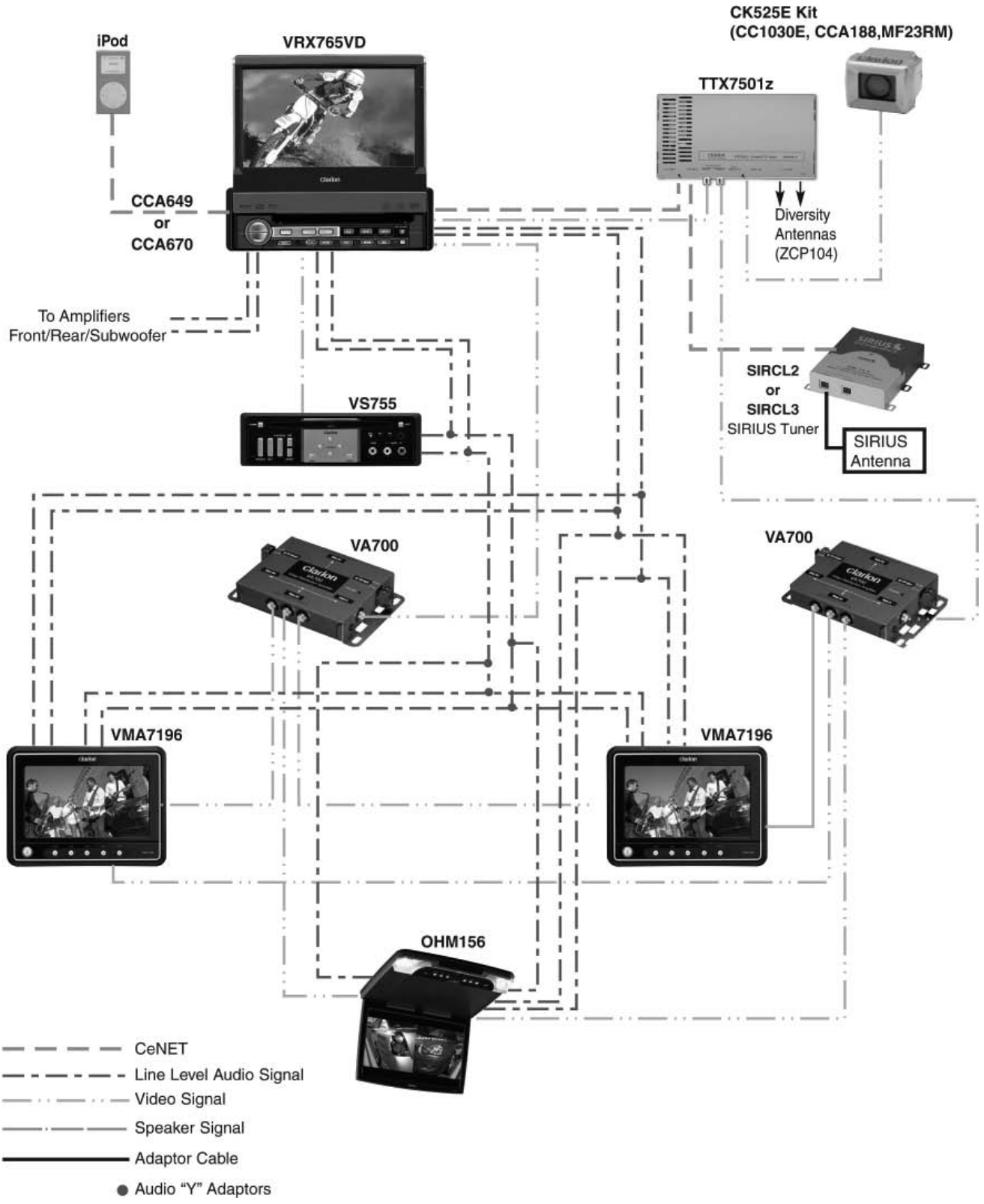


Multimedia - Applications

VRX765VD Complete Multimedia System Diagram



VRX765VD 2-Zone System Diagram



Multimedia - Error Codes

CD/DVD Player Error Codes

Problem	Cause	Measure
ERROR 2	A CD is caught inside the deck and is not ejected	This is a failure of the CD mechanism - consult your place of purchase
ERROR 3	A CD can not be played due to scratches, etc.	Replace with a non-scratched, non-warped disc.
ERROR 6	A CD is loaded upside down or can not be read	Eject the disc and insert it properly or consult your store of purchase

DVD Changer Error Codes

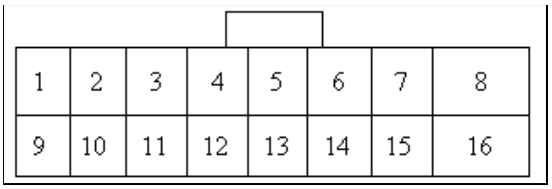
Error	Cause	Measure
MECHA ERROR	The failure of the changer mechanism	Consult your store of purchase.
DISC ERROR 6	A DVD/CD Can not be played due to scratches A DVD/CD can not be played due to a defect laser pickup The disc is loaded upside-down	Replace with a non-scratched, non warped disc Consult your store of purchase
WRONG REGION / ERROR R	The Disc Region is incorrect	Use a disc with the correct region code
PARENTAL VIOLATION ERROR P	Viewing is limited	Release the viewing limitation by changing the parental level.

FM Modulator (FMC250) Error Codes

Error	Cause	Measure
HHHH	The temperature inside the CD Changer has increased beyond a preset level	Turn off the unit and let it cool off.
ERROR 2	A problem with the CD changer mechanism has occurred	The changer mechanism may be damaged - consult your store of purchase
ERROR 3	A Disc can not be played due to scratches or a defective laser pick-up	Replace with a non-scratched, non warped disc / Consult your store of purchase
ERROR 4	The CD Changer unit is not properly connected	Turn the system power off and remake all connections. Cycle power on the remote control
ERROR 6	Disc is inserted upside down or can not be read	Ensure proper disc orientation / Consult your store of purchase
ERROR 9	The RF Modulator has ceased to function	Consult your store of purchase to arrange for repair.

If an error message other than the ones described above appears, press the rest button. If the problem persists, turn off the power and consult your store of purchase.

The following describes the pinouts for the VRX745VD, VRX755VD and VRX765VD.



Part Number: 854-5420-50

Pin	*Colour*	*Function*
1	Green	LR +
2	Black/White	LF -
3	White	LF +
4	Gray	RF +
5	Gray/Black	RF -
6	Violet	RR +
7	Violet/Black	RR -
8	Yellow	Constant +12V
9	Green/Black	LR -
10	Brown	Phone Mute input
11	Red	Ignition (+12V switched)
12	Blue	Remote turn on
13	Blue/White	Antenna output
14	Orange	Illumination input
15	Light Green	Parking brake input
16	Black	Ground

iPod Integration

The leader in iPod Integration

In 2005, Clarion set a new benchmark for iPod integration with the VRX755VD. This was the first unit to feature a full graphical iPod interface. For 2006, Clarion raises the bar much higher with the introduction of the VRX765VD and MAX675VD. Both of these units feature iPod video playback connectivity, as well as improved feature functionality for music menus.

Clarion also offers the EA1251B CeNET interface. This allows you to connect your iPod through the 30-in connector to Clarion CeNET source units dating back to 2001.

CCA649 / CCA670

IPOD INTERFACE CABLE FOR MAX675VD,M VRX765VD AND VRX755VD

- iPod-like Control and Display
- Direct Access Buttons for Play/Pause, Track Advance and Repeat, Shuffle, and Browse
- Onscreen Information of Track, Playlist Information, and Elapsed Time
- Charges iPod Battery
- 1 Year Warranty

CCA673

IPOD VIDEO INTERFACE CABLE FOR VRX765VD AND MAX675VD

- iPod-like Control and Display
- Direct Access Buttons for Play/Pause, Track Advance and Repeat, Shuffle, and Browse
- Onscreen Information of Track, Playlist Information, and Elapsed Time
- Recharges iPod Battery
- 1 Year Warranty

NOTE: In Canadian Price list as **IPODVIDEO**

EA1251B / EA1276B

CeNET-CONTROLLED BLACK BOX INTERFACE FOR IPOD

- iPod Audio Transfer Through CeNET Busing
- Direct Access to “clarion” Playlists
- Track Information on CD Text Compatible Source Units
- Charges iPod Battery
- 1 Year Warranty
- EA1276B for use with M455A and CMD4A exclusively

Navigation

clarion
W EL SEGUNDO BOULEVARD
1.3 mi
147TH
148TH
149TH
VERMONT
1/16
NE
F1
F2
F3
F4
F5
F6
0:08
S VERMONT AVENUE, LOS ANGELES, CA
3.9 mi
N.I.C.E. P200
MENU
MUTE
VOL -
VOL +

N.I.C.E.

TRANSPORTABLE NAVIGATION SYSTEM

- 7-inch Digital TFT LCD Monitor
- Touch screen user interface
- 20GB Hard Disk Drive for storage of mapping data, MP3 music files and JPEG images
- User Friendly destination inputs
- Turn-by-Turn Voice Prompts
- Selectable Route Guidance Options
- Three Mapping view options - 2D, 3D and Split Screen
- On-screen Compass and Distance-to-go indicators
- Automatic route recalculation
- Full-featured Menus
- 4,000 Entry Personal Address Book
- 2 Million Points of Interest
- Instant recall of last 15 destinations
- Built-in speakers
- Built-in Fm Audio Transmitter
- USB 2.0 port for connection to computer for uploading
- USB 1.1 port for accessing external data storage
- Rear-view camera input
- A/V input for DVD, VCR or Game System
- Remote Control
- Padded Carry Case
- Suction Cup window mount

Specifications

Operating System: Windows CE Version 4.2

Processor	High Performance Embedded 32-bit RISC (ARM 9 Core)
Storage	20GB Hard Disk Drive
Power Requirement:	12 V
Current Consumption:	1.1A Max, 0.8A Avg
Temperature Range:	-4 to 140 degrees F
Display Type	7” Digital TFT Touchscreen
Display Resolution	800 Horizontal x 480 Vertical
Weight:	1.75 lbs
Dimensions (w x h x d):	7.5” x 5.0” x 1.5” (Ant. Closed) 7.5” x 5.0” x 3.25” (Ant. Open)

Navigation – N.I.C.E.

N.I.C.E. P200

TRANSPORTABLE NAVIGATION SYSTEM

Features
- 4-inch Digital touch screen TFT LCD Display
- 20GB Hard Disk Drive for data storage
- Full Featured Menus
- Built-in speaker
- EQ mode with 5 preset sound curves
- Rechargable battery (Li-Polymer)
- USB 2.0 Port
- Brightness adjustment on Display

Navigation
- Built-in Navigation with on-cradle GPS Antenna
- Maps for Canada and USA
- Simple Destination input with touch-screen
- Turn-by-Turn voice prompts
- Selectable route guidance
- Multiple Map views: 2D, 3D and Split Screen
- On-Screen compass and distance indicators
- Automatic Route recalculation
- 2 Million Points of Interest
- 4,000 Entry Address Book
- Instant recall of last 40 destinations

Entertainment
- Video storage and playback (AVI, WMV and Xvid)
- Music storage and playback (MP3, WMA and WAV files)
- Photo storage and slideshow (JPEG images)
- Audio/Video output (Optional) for external sources / displays

Mobility
- Contact and Calendar Synchronization with Microsoft Outlook
- Portable Music and Video playback (3 hours of full motion video)
- 3.5mm Headphone connection
- Built-in Calculator & Stopwatch

Included
- Suction Cup window mount
- Cradle with Built-in GPS Antenna
- Home and Car power connector

Options:
- RCBP200 Wireless remote control
- NAVCK Audio/Video connector Kit
- NAVBK Cradle and A/V Connector kit
- NAVGPS External GPS Antenna

Specifications

Operating System:	Windows Automotive 5.0
Processor	High Performance Embedded 32-bit RISC (ARM 9 Core)
Storage	20GB Hard Disk Drive
Current Consumption:	1.1A Max, 0.8A Avg
Temperature Range:	-4 to 140 degrees F
Display Type	4” Digital TFT Touchscreen
Display Resolution	800 Horizontal x 480 Vertical
Weight:	1.0 lbs

Dimensions:

No Cradle: 4-3/4" Wide x 3-9/16" Tall x 1-1/16" Deep
In Cradle: 4-7/8" Wide x 4-1/4" Tall x 2-3/4" Deep

Dimensions do not include any cable connections - these vary from installation to installation.

Part Tour Guide, Part Personal Entertainer … N.I.C.E.

Clarion's Navigation In-Car Entertainment (N.I.C.E.) system does more than address today's hottest in-car electronics features. It also takes on today's biggest challenges, such as OEM integration and the industry's pursuit of that all-important disposable dollar. Why? N.I.C.E. can integrate with any existing stereo, and its transportability and host of entertainment- and information-related options make it one heck of an investment.

So what is N.I.C.E.? It's Clarion's answer to tomorrow's "info-tainment age," offering what's hot in today's marketplace: GPS navigation, SIRIUS Satellite Radio, mobile video, music/picture storage and playback. N.I.C.E. also offers safety with its rear-view camera capability.

For 2006, Clarion takes portability one step further with the introduction of the N.I.C.E P200. With the P200, Clarion adds a Lithium-Polymer rechargeable battery, Cradle based docking system, Compressed video file playback and Microsoft Outlook contact and calendar synchronization. The P200 features a 4" touch screen for true portability.

The Cure for OEM Integration
If you have a customer that's adamant about your installers not tearing into his or her vehicle's dash, or that customer says they are more than satisfied with their existing stereo system, N.I.C.E. will keep you in the sales game. Bottom line, N.I.C.E. has a compelling story to tell. Here's why:

1. The Suction Cup Mounting Solution
All your customer needs to do is pick a location on the windshield. Stick the suction cup to the desired location, press the air-release button, and then pull back the small lever to lock the mount into place. This mount also offers two adjustment points, allowing users to easily dial in the correct angle.

You can move NICE from one car to another and be on the road in less time than it takes to fill half a tank of gas.

2. Wireless Audio
Built into N.I.C.E. is an FM transmitter that wirelessly feeds audio to an existing stereo. An optional cradle with a built-in FM transmitter is available for the P200.

3. Built-In Speaker
N.I.C.E.'s built-in speaker certainly is a convenient feature, especially when you're on the road. The built-in speaker can also be used to entertain the front-seat driver and passenger while back seat passengers enjoy a rear-seat video entertainment system. The speaker can also be used to hear voice prompts during navigation when the vehicle's existing stereo system is in use.

4. Built-In GPS Antenna
N.I.C.E. is truly ready to go right out of the box. The N.I.C.E. offers a flip-up antenna on the rear of the unit, and the P200 has the GPS antenna integrated into the included cradle. No need to fumble with wires, just plug, stick and go.

Going Custom…We've Got Accessories!
There are a couple of key accessories you need to know about if you're looking at going custom. First, you'll need to add Clarion's NAVGPS, an external GPS antenna that will take the place of the built-in GPS antenna (Note: the NAVGPS is not required for transportable applications). You may also want to consider the NAVAUDIO audio output cable if you're considering a direct feed to a source unit's AUX input.

Other N.I.C.E. accessories to consider is Clarion's NAVSIR (SIRIUS tuner and antenna package). This required component allows N.I.C.E. to receive the satellite radio company's commercial free selection of music, sports and entertainment.

For the P200, add the NAVCK (Audio/Video connector) to transmit the image that is on the screen of the P200 to an external video display.

The NAVBK Cradle and Connector kit for the P200 includes the NAVCK A/V cable as well as an FM transmitter built in to the new cradle. This makes integration seamless and easy.

N.I.C.E.'s Part Tour Guide Feature
Clarion's N.I.C.E. utilizes a global positioning system (GPS) to get you where you need to go, as it directly communicates with orbiting satellites above to calibrate its position. For quicker execution of route calculations, fast rerouting response, and rapid access to all features, N.I.C.E. comes equipped with a high-performance 32-Bit RISC (ARM9 Core) processor.

Mapping Software and Updates
Powered by NavMate Navigation Software, N.I.C.E.'s 20GB hard drive already comes equipped with maps of the entire United States, Hawaii, Alaska and Canada. DVD software updates will be released, which your customers can purchase by following a link from the www.clarion.com Website.

N.I.C.E. Optional Accessories and replacement parts

NAVGPS
EXTERNAL SMART GPS ANTENNA

NAVAUDIO
STEREO AUDIO OUTPUT ADAPTER FOR N.I.C.E.

NAVAV
AUDIO VIDEO INPUT CABLE

NAVSIR
N.I.C.E.-SPECIFIC SIRIUS SATELLITE RADIO RECEIVER.

RCBNAV
REPLACEMENT IR REMOTE CONTROL FOR N.I.C.E.

RCBP200
REPLACEMENT IR REMOTE CONTROL FOR P200

NAVMOUNT
REPLACEMENT MOUNTING BRACK FOR N.I.C.E.

NAVCAMERA
REAR VISION INPUT CABLE FOR N.I.C.E

NAVCIGAR
REPLACEMENT CIGARETTE LIGHTER POWER CORD.

NAVCK
AUDIO VIDEO OUTPUT CABLE FOR P200

NAVBK
FM TRANSMITTER CRADLE AND A/V OUTPUT CABLE FOR P200

Source Units

Source Units – Technologies

Feature Technologies

Clarion continues to evolve technology with: Optimedia, Fine Integrated Full Dot FD Display, Front Panel USB, Music Catcher II, and ADF.

• Optimedia-equipped head units feature a full color 4.2" TFT touch panel display.

• The DXZ665MP and DXZ765MP feature the industries first Fine Integrated Full Dot Vacuum Fluourescent display. This display is easy to read at all viewing angles, offers excellent contrast and resolution.

• The DB365USB features a front-panel mounted USB port. A memory stick, card reader or portable music player can be connected for access to up to 255 songs.

• Music Catcher II is a technology embedded in the DFZ675MC allowing the unit to digitally record up to six CDs worth of music at 4x recording speed at four different quality levels.

• Source units containing the ADF feature can dramatically restore lost dynamics caused by compressed audio. The DXZ865MC features adjustable ADF processing.

Connectivity

Bluetooth Integration

BTZ1 CeNET Bluetooth Interface
This allows a compatible Bluetooth-enabled cellular phone to connect with the CeNET source unit to reproduce the callers voice, while a sun-visor mounted microphone allows you to communicate hands-free.

BT1
The BT1 Bluetooth interface allows you to use your Bluetooth-enable cellular phone through any audio system, even your factory audio system. The BT1 is a speaker-level four-channel interface that will allow the sound of the callers voice to be heard through the front speaker while the audio from the source unit is muted. The BT1 features a sun-visor mounted module that includes a microphone, volume and mute button.

Clarion CeNET
Clarion launched CeNET in 2001 - offering a way for accessories to be connected, controlled by and integrated with our source units. Clarion CeNET is much more than just an aux input - it offers fully shielded differential audio transmission that is nearly impervious to RFI interference, allowing the accessory to communicate with the micro controller (computer) in the source unit and display information on the screen of the source unit.

The following CeNET devices are available - the owner's manual for your source unit will explain which are compatible with your product

EA1251B/EA1276B - CeNET iPod Interface

Compatible with more than a quarter-million Clarion source units on the market today (dating back to 2001), Clarion's CeNET iPod interface is your customer's way of "Podifying" their in-car experience. The interface, which powers and charges the iPod during operation, is compatible with source units with model numbers containing the letter "Z" — which signifies that the unit offers CeNET control.

Mirroring the control of a CD changer, the interface requires the user to create six playlists. The title of each playlist must contain the word "clarion (no caps)" followed by the playlist number (ie., clarion1 or clarion2). The first playlist automatically collects all songs loaded into the iTunes program. The user can personalize the remaining five.

The EA1251B works with CeNET head units. The EA1276B was designed to provide text information on the CMD4A and M455A. These decks use a slightly different text display method.

• Interface is not equipped with a pass-through CeNET connection. Installers must use Clarion's CCA519 to connect additional CeNET-controlled components.

SIRCL3

These units allow for the reception of Sirius Satellite radio. The source unit AM/FM presets can be used when in Sirius mode to store your favorite stations. Station information, Artist and Song title information will be displayed on the source unit when used with any of these modules

DCZ625

The DCZ625 is a six-disc CD changer compatible with all CeNET enable source units.

VCZ625

The VCZ625 is a six-disc DVD changer compatible with all CeNET enable source units. This changer will also decode MP3 files from CD, CD-R or CD-RW discs. (Except CMD4 and M455)

DVH940

The DVH940 is a surround sound processor compatible with VRX and MAX series source units. This unit decodes Dolby Digital and dts surround sound information. The DVH940 features electronic crossovers, parametric equalizers and time delay adjustment for the center and rear channels.

TTX7501z

The TTX7501z is a TV Tuner module that integrates with many source units. The AM/FM radio preset buttons can be used to store your favorite TV stations for easy access. The TTX7501z features a four-channel diversity antenna input for optimum picture quality.

Sound Quality

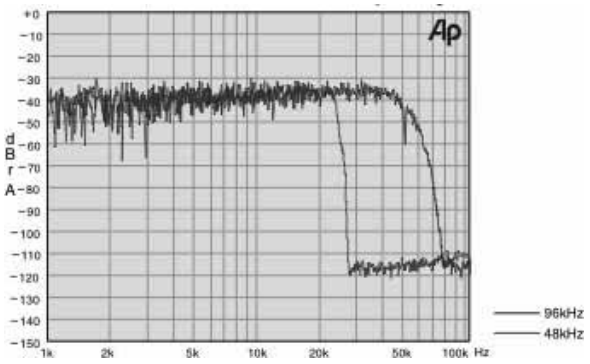
1-Bit and 24-Bit Digital-to-Analog Converter

Clarion's 1-bit D/A bitstream converter produces signal levels that are either "one" or "zero." Because of this, the conversion process is not prone to the types of errors found in the multi-bit D/A conversion. The results of a 1-bit D/A conversion is excellent linearity and a virtual absence of distortion.

In Clarion's 24-bit D/A converter (in the DRZ9255, DXZ865MP and DXZ765MP), the digital code of the "one" or "zero" bits is read more often than the standard 1-bit decoding rate of 44,100 bits per second for audiophile sound quality and more detailed music quality. A 24-bit D/A converter greatly reduces linearity errors and notch distortion, resulting in superior sound and less system noise.

96kHz Digital to Analog converter

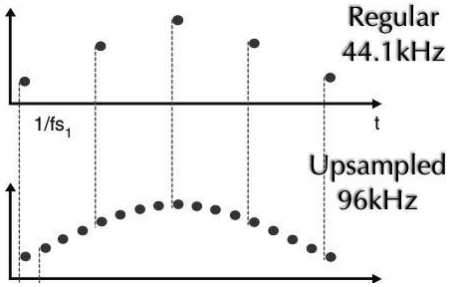
Few components have as large an effect on the ultimate sound quality of a source unit as the D/A converter. It is this devices that interprets the 16-bit digital information recorded on a CD and converts it back into an analog waveform - or music. Any errors or frequency response limitations of the D/A converter directly limit the quality of the reproduced sound. Car Audio magazines and enthusiasts agree that the Clarion DRZ9255 is indeed one of the finest sounding source units on the market - the key reason - the Burr-Brown 24-bit 96kHz D/A converter.



The sampling rate (or how often the D/A converter converts a digital signal back to analog) defines the highest frequency that can be reproduced. A

conventional D/A converter operates at 44.1kHz and as defined by the Nyquest Frequency (the highest frequency that can be reproduced is half of the sampling frequency) the highest frequency that can be reproduced is 22.05kHz.

The 96kHz D/A converter in the DRZ9255 operates at twice this frequency, moving the maximum reproducible frequency up to 48kHz.



What does this mean for the end-user? Any time a filter is implemented in a circuit, it not only affects frequency response, but also phase response (the relative arrival time of different frequencies). Moving the high frequency roll-off up one octave higher means that the DRZ9255 can reproduce high frequencies with coherence, detail and clarity. Clarion was the first company to implement a 96kHz DAC in the car audio industry.

High Voltage Preamplifier Output

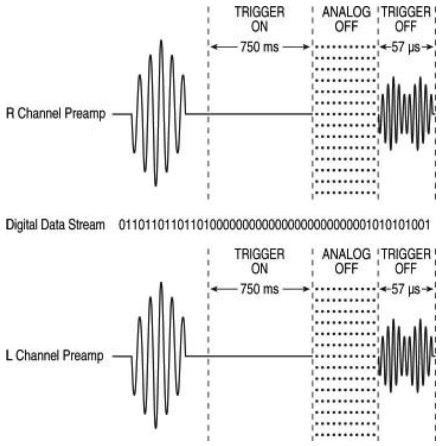
A high preamplifier voltage provides reduced signal clipping, less chance of vehicle electrical noises altering signals between source unit and amplifier, and a lower amplifier input gain setting to reduce system noise levels.

Clarion's DXZ865MP and DXZ765MP source units, as well as several processors, feature 4-volt, low-impedance (less than 330 ohms) outputs that minimize the possibility of a clipped and distorted output signal. This results in a much cleaner musical signal sent to the power amplifier with less rolloff at the top and bottom of the frequency range. The end result is musical reproduction with extended dynamic range and more headroom.

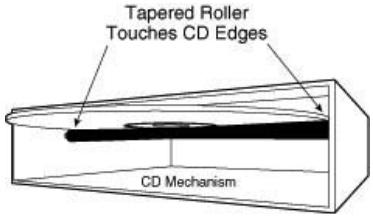
The DRZ9255 offers an 8Vrms pre-amp output for even better signal to noise performance.

Zero-Bit Detector Mute Circuit

Clarion CD Players feature a zero-bit detection circuit. This circuit turns off (mutes) both the line-level and speaker-level outputs when it does not see a digital signal for more than 750 milliseconds. Since a digital signal consists of "one" and "zero" bits, the zero-bit detector will turn off the analog audio input signal to the preamp section when it sees a series of zero bits. The purpose of this circuit is to eliminate tracking noise or background noise that is typically associated with the decoding of the digital signal to its final analog form.



The zero-bit detector mutes the preamplifier analog outputs after a series of zero bits exceeds 750-ms. Audio is restored after a period of one and zero bits is longer than 57 µs.



Clarion's Low-Vibration Suspension System

Clarion CD players, CD and DVD changers, feature an advanced suspension system to prevent skipping and mistracking. Clarion incorporates a system of springs and dampeners to minimize the chances of skipping, whether the unit's on the road, off the road, or on the water. Along with the suspension system, a three-beam laser pick-up assembly is employed. The center pick-up detects the digital information that is sent to

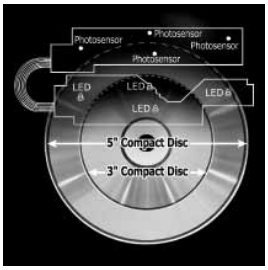
the D/A converter. The inner and outer pick-ups guide the laser assembly to precisely track the digital information on the CD. With the advanced suspension system, D/A converters and the zero bit detection circuit, it is easy to see why Clarion CD players perform flawlessly and with excellent sound quality.

Clarion's CD Operational Safeguards

Clarion's CD operational safeguards allow the CD mechanism to detect disc size, prior disc-in-drive detection, foreign object detection, and auto reload.

A tapered loading-roller precisely centers the CD onto the drive spindle. Since the roller mechanism is tapered, only the edges of the CD are touched, thereby eliminating the possibility of scratches. A sensor prevents disc loading when one is already in the player by automatically closing a loading gate.

These operational safeguards allow safer CD disc handling, prevent jams from accidental loading of two CDs, and helps to reduce service problems by detecting foreign objects in the drive mechanism.

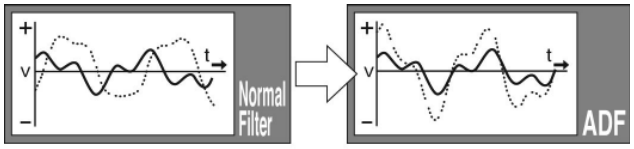


Clarion's CD mechanism uses photosensors and LEDs to identify 3" or 5" compact discs. Clarion's CD mechanism uses a tapered roller to precisely center the CD onto the drive spindle.

Audio Signal Processing Technologies

ADF (Anti-Distortion Filter)

No one can question the benefits of compressed audio formats such as MP3 and WMA music files: more songs and more selection. The downside of this format is sound quality. With Clarion's embedded Anti-Distortion Filter (on the DXZ865MP and DXZ955MC), the rich, full sound lost during compression is restored for dramatic sound reproduction. ADF also corrects deficiencies of overused CDs. The benefits don't stop there, either. From road noise to sound-hindering interior cabin designs, the environment inside a vehicle is not an ideal place for optimal sound reproduction. Clarion's Anti-Distortion Filter corrects these problems, preventing high- and low-range frequencies from becoming inaudible. This is done without any additional frequency boost to compensate for the inherent problems, which can result in muffled, dull sounds generated by mutual phase distortion.



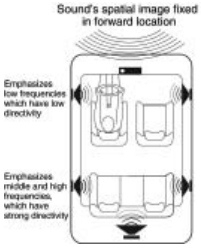
ADF enhances and corrects sound quality, while a normal filter alters the wave form.

AC-Processor IV: Cutting Edge Technology for Total Sound Control

The AC-Processor III is Clarion's advanced digital sound processing technology. It was developed by bringing together various sound quality and sound field manipulation technologies. It provides a wide spectrum of features like Dolby Pro Logic II, Virtual Space Enhancer, Time Alignment, Electronic Crossovers and Parametric EQ. The AC-Processor IV has four modes: Pro Logic II, Standard Mode, 2-Way and 3-Way. With all these features and functions, the AC-Processor IV allows for nearly infinite system configuration and manipulation.

Dolby Pro Logic II

Dolby Pro Logic II is a matrix sound decoding technology developed by Dolby Laboratories that is able to take any 2-channel source, such as a CD or radio broadcast, decode it, and output it as 5.1-channel sound. Clarion was the world's first to incorporate this innovation into the mobile environment, enabling the sonic experience of a live concert to be reproduced in your vehicle.


Sound's spatial image fixed in forward location
Emphasizes low frequencies which have low directivity
Emphasizes middle and high frequencies, which have strong directivity

Source Units – Technologies

Since it's equipped with a Center Width Control and a Matrix Mode that simulates the center channel speaker using the front L/R speakers, you can reproduce quasi 5.1 surround sound effect from just the four standard speakers in your vehicle. And other "live sound" adjustments like Dimension mode and Panorama mode are also available.

Virtual Space Enhancer

The car's interior is plagued by a standing wave produced by reflective sounds in the neighborhood of 230 Hz, which disrupts low frequency reproduction. Taking this in to consideration, Clarion has designed and developed the Virtual Space Enhancer (or VSE). It allows the user to digitally compensate for irregular reflection, polarization, and other acoustic problems associated with the vehicles interior.

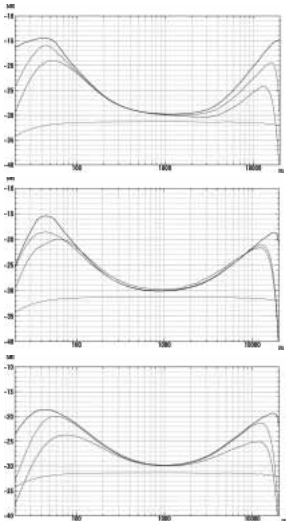
Time Alignment Control

For pinpoint accuracy, Clarion allows you to adjust your system's speakers to deliver the same acoustical effects. The system is based on five basic positioning points: FRONT-L, FRONT-R, FRONT, REAR, and FULL SEAT. Aside from your system's acoustic patterns, digital time alignment allows you to optimize your system to account for the number of passengers inside your vehicle's interior cabin. The adjustment range is 0 to 500 cm, in 2.3 cm steps).

The DRZ9255 offers incredibly fine control over each of its 8 outputs - you can adjust the delay in 0.7cm (roughly 1/4")-inch steps for perfect speaker to speaker adjustment - just another reason the DRZ9255 is perhaps the finest source unit in the industry.

Digital Z-Enhancer

Providing the most accurate and elegant signal processing solution is the new Digital Z-Enhancer. Found in the DFZ675MC, this integrated equalizer features three sound curves, each with three levels of effect, providing moderate to significant low and high-frequency boost. All processing takes place in the new Digital Z-Enhancer DSP chip for phase-shift free, accurate adjustment.



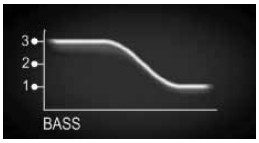
DZE-1

DZE-2

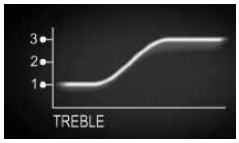
DZE-3

Z-Enhancer Plus

Provides ease of operation for correction of low and high frequencies with two parametric settings. In addition, three preset EQ settings are available.



Low Frequency Boost



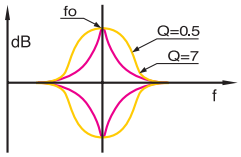
High Frequency Boost

Low and High Frequency Boost

Using the Z-Enhancer is as easy as selecting the preset that sounds the best. No need for years of experience in system tuning. Press the button and enjoy.

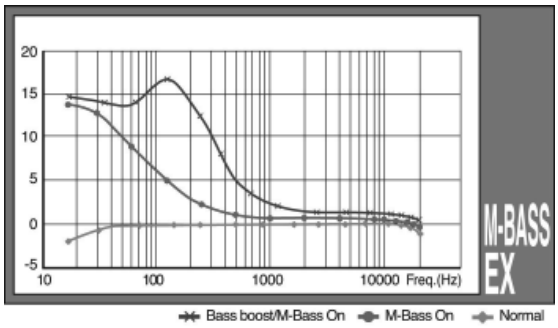
3-Band Parametric Equalizer and Beat EQ

In the event that typical BASS and TREBLE tone controls can't adequately adjust the music, the AC-Processor IV has a built-in parametric EQ. This EQ utilizes a three-band, 1/3-octave equalizer with



adjustments for gain, frequency, and Q (width of the adjusted frequency). For those looking for simplicity, Beat EQ has three bands (low, mid and high) with eight frequency choices (three for low, three for mid and two for high). This feature also offers adjustments for gain and Q. There are also three preset EQ curves for Bass Boost, Impact, or Excite.

Magna Bass EX



Compared to conventional loudness features, which boost the low frequency range of 100Hz, Magna Bass EX boosts the ultra-low frequency with a center frequency of 50Hz. With an automatic boost level control, it's able to produce a well-balanced bass volume depending on sound level, resulting in dynamic bass reproduction.

Audio Features

Front Panel USB

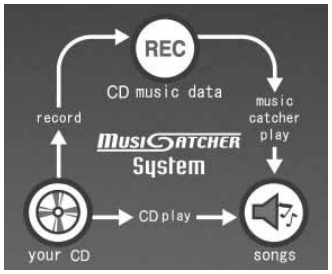
Transporting music from your computer to your car has never been easier than it is with the DB365USB. With its front-panel USB slot, simply copy up to 255 of your favorite songs to a memory stick, and plug it in. There you have it, all your favorite MP3 or WMA files, accessible and easily transportable. No need to burn fragile compact disks or purchase expensive portable music players. Load and go with Clarion Front Panel USB.

Clarion's incorporated the USB slot right into the face of the radio. This means, no additional installation cost and no fragile cables to become damaged. Simple and reliable 100% of the time.

Front Panel SD Card Slot

As a sibling to the Front Panel USB slot on the DB365USB, the DFZ675MC features a Front Panel SD Card slot. This functions in the same manner as the USB slot, allowing you to transport up to 255 of your favorite songs on a compact SD card. You can choose from MP3 or WMA compressed files. With Front Panel SD, you always have your music at your fingertips.

Music Catcher II System



Clarion unveils its evolved Music Catcher System II (found on the DFZ675MC). Music Catcher II, which operates by built-in flash memory, allows one to freely record, play and erase up to 13 CDs worth of music data files (Music Catcher will not record MP3/WMA files). Music Catcher offers four recording modes to choose from, so you can choose between storage capacity and fidelity.

Music Catcher II is also capable of recording audio at 4x normal playback speed, letting you record your favorite songs faster than ever.

By using the Music Catcher System, no longer is

there a need to carry around that cumbersome CD storage case, or risk damage to your favorite CD. This system also eliminates the need for space-taking CD changers.

CD-R/CD-RW Playback

Clarion CD Players let you play a variety of CDs. You can burn WAV files on CD-R or CD-RW and listen to them on Clarion source units. You can even add disc/artist/song titles when burning the CD-R/RWs, and many source units will display this information.

MP3 and WMA

All source units except but the DB165 and DXZ265 offer MP3 Playback and all units at the 3-series and up offer playback of WMA-encoded (Windows Media Audio) music. WMA formats have a higher compression rate than MP3s, permitting more music information with maximum fidelity to be recorded on a CD-R or CD-RW. Clarion's MP3/WMA players support ID3/WMA Tags and display Album Title, Track Title, and Artist Name. Furthermore, the DXZ665MP and higher models can also play back "Play Lists" that you setup on your PC (with file extensions ".m3u" or ".asx").

MP3 technology is a different way of compressing music into a smaller storage space. A standard audio CD touts up to 700 megabytes (MB) of storage, enough for a standard music playback time of about 80 minutes. MP3 is a compression format that stores digital audio information in about 1/10 the space of a standard audio CD. In other words, a 700-MB CD can store up to 10 HOURS of music!

MP3 discs can be made from standard digital audio files in a conversion process called "ripping." A standard digital audio file is compressed and converted into an MP3 file. A special program is needed to play back these MP3 files on any computer. These MP3 files can be "burned" (recorded) onto a CD-R (recordable) disc for playback on an MP3 enabled device.

Design and Interface

Optimedia Display

Combining impeccable styling with full-color touch-screen capability, Clarion's reformatted Graphic User Interface (GUI) provides superior functionality in an environment where ease-of-use is of utmost importance. Intuitively linking the movement of the user's fingertips to the screen, Clarion's advanced Optimedia display found on the DXZ865MP, provides precise control of display functions and features.

Fine Integrated Full-Dot Vacuum Fluorescent Display

The VFD consists of a vacuum tube in which there are three electrodes - filament, anode and grid. The VFD is similar in designed to a very small Cathode Ray Tube. The filament is heated to a temperature just below the point of incandescence. At this temperature it remains invisible, but releases electronics. A transparent metal grid covers each of the image anodes (dots). These glow when struck by the electrons from the filament. The amplitude of the voltage applied to the grid and anode determines the intensity of the illumination.

Clarion's Fine Integrated Full-DOT VFD display offers exceptional resolution, clarity and contrast. With 16 intensity levels, images and text are easily displayed at high speed.

Smart Control Key
The DXZ665MP through DXZ765MC models feature the new Smart Control Key. Located directly to the left of the volume control, this key allows for easy access to different tracks, radio stations and easy navigation of menus.

Retractable Rotary Volume Control
Much more ergonomic and intuitive than buttons, this control lets you adjust the volume with analog- type flexibility. It helps you keep your eyes on the road while keeping your ears entertained.

Multicolor Display

DXZ765MC, DXZ665MP and DFZ675MC source units have adjustable multiple color displays, which can be user customized. Not only the display colors, but also the illumination of control buttons change to match the display! You can select from 728 different colors to ensure a perfect match to your factory illumination.

Subwoofer Level Control and Built-In Low-Pass Crossovers
Many source units feature a subwoofer level control, which is accessible when the "A-M" button (located on the front-panel of the source unit) is pressed. This feature allows for instant subwoofer adjustment and more control over the sound system. Included with the Subwoofer Level Control is a built-in low-pass crossover with selectable frequencies at 50, 80, or 120 Hz. The front and rear powered speaker outputs are not affected by the low pass crossovers, and can be used to power front and rear speakers, while the subwoofer/rear channel line level outputs can drive a subwoofer amp and subwoofer.

Message Information
On most source units, you can personalize your display with customized messages. This feature allows for up to 30 character messages, which are displayed when the unit is turned on or off.

Last Position Memory
This is a feature that many inexpensive head units don't offer. When you turn off the ignition, then turn it back on, Clarion head units resume playback from where you left off - not the beginning of the disc or track.

Top Button
It may seem like a simple feature, but helps make disc navigation even faster - the Top Button instantly takes you back to the first track on the disc you are listening to.

Power Antenna Lead
Clarion CeNET enabled source units feature a dedicated power antenna lead - not just a remote turn-on lead. This means that the power antenna will only be extended while listening to the radio.

Phone Mute Input
Compatibility with external accessories means that Clarion head units can be the center of an elaborate in-car entertainment system. Clarion CeNET enabled head units include a Cell Phone Mute input wire. This wire will mute the audio output when connected to a cell phone car kit. The brown wire is the phone mute wire.

Illumination and Dimming
The ability to see clearly down the road when driving at night means you don't want any distractions - Clarion has equipped most of its source units with a dimmer input wire. When 12V is applied to this wire, the display on the face of the radio will reduce its light output, following the function of the factory dash. The illumination input wire is Orange.

Source Units – Technologies

ISO Mount Capable
All Clarion single-DIN source units can be mounted without the use of their trim ring to compatible ISO-mount vehicles. This means the source unit will look as though it was installed from the factory - while offering a stunning performance upgrade.

Key Off Eject
Sometimes we forget to take our favorite CD back into the house after a drive - Clarion makes retrieving your music easy with Key-Off eject. The disc eject function operates even when the cars ignition is turned off.

Memory Backup
Clarion source units include a memory backup feature. This allows a source unit to retain its radio presets for a period of time between 8 and 24 hours depending on the model of source unit. Should the vehicle battery need to be disconnected for service, this prevents you from having to re-enter all the radio presets.

Instant Station Recall
Everyone had a favorite radio station and Clarion source units make it easy to listen to. Just program your favorite AM or FM station into the ISR feature and no matter what source you are listening to, pressing the ISR button will bring up your favorite radio station - no need to hunt through presets or change sources.

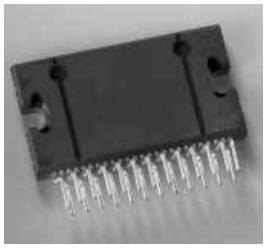
Auto Store
When travelling, sometimes it's nice to tune into a local radio station to catch the news, weather, traffic or some new music you've never heard before. Clarion source units include an Auto store function. Simple activate the Auto Store and the six strongest stations in the are loaded into the current radio station preset group. Just remember not to erase all your favorites from home.

Power and Performance

CEA-2006 Ratings
All new Clarion amplified products have been rated using the CEA-2006 specification. This specification was created to allow power production numbers to be compared between one brand and another without concern for measurement type.

The CEA-2006 specification states that power measured using this format well be constant through the entire specified audio bandwidth range. The power measurement will be taken with 14.4V being supplied and the distortion from the output signal can't exceed 1%.

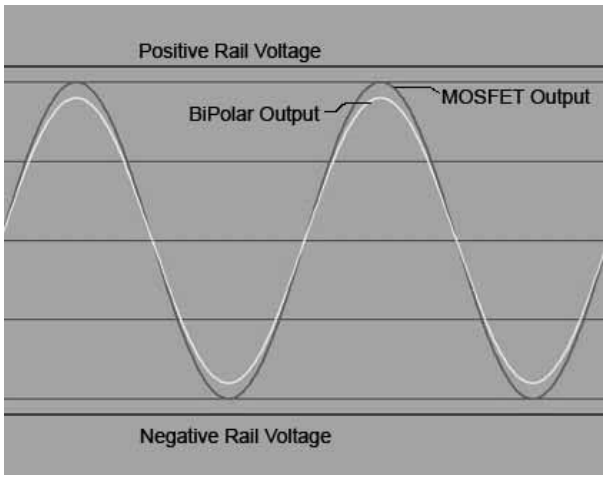
Just as with the power ratings, Signal to Noise (S/N Ratio) measurements will follow similar guidelines. The S/N Ratio measurement will be taken at a power level of 1W into a 4 Ohm load. This means that all device measurements will be comparable, no matter how much power the product produces.



212W MOSFET Power IC
For 2006, Clarion launches yet another new amp IC in our head units. The MOSFET Power IC is smaller and more efficient than previous amplifier designs, virtually eliminating distortion.

MOSFET amplifiers are capable of producing more power because the output voltage can be switched closer to the rail voltage. In a head unit, with only 12V of power being supplied from the cars electrical system, it is critically important to maximizing amplification.

The new MOSFET Power IC found in the DXZ865MP, DXZ65MP and DXZ665MP are capable of producing 53W x 4 Max power and an impressive 22W x 4 using the CEA-2006 power rating.



The solid horizontal lines denote the positive and negative amplifier power supply rail voltage.

The smaller sine wave shows the maximum undistorted output from a standard bipolar output transistor

The larger sine wave shows the maximum undistorted output from a MOSFET output device.

Source Units - DB165/DB265MP

DB165

CD RECEIVER

- Plays CD, CD-R & CD-RW
- 2-Channel RCA Output
- 180W Amplifier (45W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Rotary Volume Control
- 18 FM/6 AM Presets
- 13-Segment. 8-Digit LCD panel
- White on Blue Illumination

Wire Harness	854-634-959
Replacement DCP	DCP-569

Specifications

Maximum Power Output	45 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	80dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	93 dB
Harmonic Distortion	0.03%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	11 dBf
FM 50 dB Quieting Sensitivity	17 dBf
FM Stereo Separation	35dB

DB265MP

CD/MP3 RECEIVER

- Plays CD, CD-R & CD-RW
- MP3 decoding with ID3 tag display
- 2-Channel RCA Output
- 180W Amplifier (45W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Rotary Volume Control
- 18 FM/6 AM Presets
- 13-Segment. 8-Digit LCD panel
- White on Blue Illumination
- IR Remote Control (Optional)

Wire Harness	854-634-959
Replacement DCP	DCP-570
Optional remote Control	RCB-176

Specifications

Maximum Power Output	45 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	80dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	95 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	11 dBf
FM 50 dB Quieting Sensitivity	17 dBf
FM Stereo Separation	35dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

Source Units - DXZ265/DB365USB

DXZ265

CD RECEIVER WITH CENET CONTROL

- Plays CD, CD-R & CD-RW
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 2-Channel RCA Output
- 200W MOSFET Amplifier (50W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Rotary Volume Control
- Smart Control Key
- 18 FM/6 AM Presets
- 13-Segment. 8-Digit LCD panel
- White on Blue Illumination
- Screen Savers
- Built-In Amp Canceller
- IR Remote Control (Optional)

Wire Harness	854-634-959
Replacement DCP	DCP-600
Optional remote Control	RCB-176

Specifications

Maximum Power Output	50 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	81dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	80 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	11 dBf
FM 50 dB Quieting Sensitivity	17 dBf
FM Stereo Separation	35 dB

DB365USB

CD/MP3/WMA RECEIVER WITH FRONT PANEL USB SLOT

- Plays CD, CD-R & CD-RW
- Front Panel USB Slot
- MP3 and WMA decoding with ID3 tag display
- 4-Channel RCA Output
- 2-Channel RCA Input with level control
- 180W Amplifier (45W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Rotary Volume Control
- 18 FM/6 AM Presets
- 13-Segment. 8-Digit LCD panel
- White on Blue Illumination
- IR Remote Control

Wire Harness	854-634-959
Replacement DCP	TBA

Specifications

Maximum Power Output	45 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	80dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	95 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	11 dBf
FM 50 dB Quieting Sensitivity	17 dBf
FM Stereo Separation	35dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

Source Units - DXZ365MP/DXZ465MP

DXZ365MP

CD/MP3/WMA RECEIVER WITH CENET CONTROL

- Plays CD, CD-R & CD-RW
- MP3 and WMA decoding with ID3 tag display
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 2-Channel RCA Output
- 200W MOSFET Amplifier (50W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Rotary Volume Control
- Smart Control Key
- 18 FM/6 AM Presets
- 13-Segment. 8-Digit LCD panel
- White on Blue Illumination
- Screen Savers
- Built-In Amp Canceller
- IR Remote Control

Wire Harness	854-634-959
Replacement DCP	DCP-547

Specifications

Maximum Power Output	50 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	81dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	80 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	11 dBf
FM 50 dB Quieting Sensitivity	17 dBf
FM Stereo Separation	35 dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

DXZ465MP

CD/MP3/WMA RECEIVER WITH CENET CONTROL

- 2 Year Warranty
- Full Dot Matrix Display
- Plays CD, CD-R & CD-RW
- MP3 and WMA decoding with ID3 tag display
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 4-Channel RCA Output
- 2-Channel RCA AUX Input
- 208W MOSFET Amplifier (52W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Rotary Volume Control
- Smart Control Key
- 18 FM/6 AM Presets
- White on Blue Illumination
- Screen Savers
- Built-In Amp Canceller
- IR Remote Control

Wire Harness	854-634-959
Replacement DCP	DCP-548

Specifications

Maximum Power Output	52 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	81dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	80 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	11 dBf
FM 50 dB Quieting Sensitivity	17 dBf
FM Stereo Separation	35 dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

Source Units - DXZ665MP/DXZ765MP

DXZ665MP

CD/MP3/WMA RECEIVER WITH CENET CONTROL

- 2 Year Warranty
- Fine Integrated Vacuum Fluorescent Display
- Plays CD, CD-R & CD-RW
- MP3 and WMA decoding with ID3 tag display
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 4-Channel RCA Output
- 2-Channel RCA Aux Input
- 212W MOSFET Amplifier (52W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Retractable Rotary Volume Control
- Smart Control Key
- 18 FM/6 AM Presets
- 728 Color Button Illumination
- Screen Savers
- Built-In Amp Canceller
- IR Remote Control

Wire Harness	854-634-959
Replacement DCP	DCP-572

Specifications

Maximum Power Output	52 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	81dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	95 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	9 dBf
FM 50 dB Quieting Sensitivity	15 dBf
FM Stereo Separation	35 dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

DXZ765MP

CD/MP3/WMA RECEIVER WITH CENET CONTROL

- 2 Year Warranty
- Full Dot Fine Integrated Vacuum Fluorescent Display
- Plays CD, CD-R & CD-RW
- MP3 and WMA decoding with ID3 tag display
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 24-Bit D/A Converter
- 6-Channel 4-Volt RCA Output
- 2-Channel RCA Input
- Adjustable Subwoofer output with low-pass crossover
- 212W MOSFET Amplifier (53W x 4)
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Retractable Rotary Volume Control
- Smart Control Key
- 18 FM/6 AM Presets
- 728 Color Button Illumination
- Screen Savers
- Built-In Amp Canceller
- IR Remote Control

Wire Harness	854-634-959
Replacement DCP	DCP-571

Specifications

Maximum Power Output	53 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	4.0Vrms
CD Signal to Noise Ratio	81dB 1W into 4 Ohms
CD Frequency Response	5 Hz to 20 kHz
CD Dynamic Range	95 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHZ
FM Frequency Response	30Hz to 15 kHz
FM Usable Sensitivity	9 dBf
FM 50 dB Quieting Sensitivity	15 dBf
FM Stereo Separation	35 dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

Source Units - DXZ865MP/ DXZ955MC

DXZ865MP

CD/MP3/WMA OPTIMEDIA RECEIVER WITH CENET CONTROL

- 2 Year Warranty
- Full Color 4.2" TF LCD Display with touch screen
- Plays CD, CD-R & CD-RW
- MP3 and WMA decoding with ID3 tag display
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 24-Bit D/A Converter
- 6-Channel 4-Volt RCA Output
- 2-Channel RCA Aux Input
- Adjustable Subwoofer output with low-pass crossover
- 212W MOSFET Amplifier (53W x 4)
- Anti Distortion Filter
- Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Detachable Face Panel
- Rotary Volume Control
- 18 FM/6 AM Presets
- Auto Dimmer Control
- 3 full color full motion Screen Savers
- Screen Savers
- Spectrum Analyzer display
- Built-In Amp Canceller
- IR Remote Control

Wire Harness	854-634-959
Replacement DCP	DCP-555

Specifications

Maximum Power Output	53 Wrms x 4
CEA-2006 Power Output	22 Wrms x 4
Line Level Output Voltage	4.0Vrms
CD Signal to Noise Ratio	88dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	96 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	9 dBf
FM 50 dB Quieting Sensitivity	15 dBf
FM Stereo Separation	32 dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

DXZ955MC

CD/MP3/WMA OPTIMEDIA RECEIVER WITH CENET CONTROL AND MUSIC CATCHER

- 2 Year Warranty
- Full Color 4.2" TF LCD Display with touch screen
- Plays CD, CD-R & CD-RW
- MP3 and WMA decoding with ID3 tag display
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 24-Bit D/A Converter
- 6-Channel 4-Volt RCA Output
- 2-Channel RCA Input
- Adjustable Subwoofer output level
- Low, High and bandpass 3-way crossover
- 212W MOSFET Amplifier (53W x 4)
- AC Processor IV w/ Time Alignment, Dolby Pro Logic II & EQ)
- Anti Distortion Filter
- 3-band Parametric EQ
- Magna Bass EX
- 45 Second Shock Proof memory
- Random Play, Intro Scan, Track Repeat
- Detachable Stainless Steel trim Face Panel
- Rotary Volume Control
- 18 FM/6 AM Presets
- Auto Dimmer Control
- 3 full color full motion Screen Savers
- Spectrum Analyzer display
- Adjustable Display Contrast
- Built-In Amp Canceller
- IR Remote Control

Wire Harness	854-634-959
Replacement DCP	DCP-555

Specifications

Maximum Power Output	53 Wrms x 4
CEA-2006 Power Output	18 Wrms x 4
Line Level Output Voltage	3.0Vrms
CD Signal to Noise Ratio	100dB 1W into 4 Ohms
CD Frequency Response	5Hz to 20KHz (±1dB)
CD Dynamic Range	96 dB
Harmonic Distortion	0.005%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	9 dBf
FM 50 dB Quieting Sensitivity	15 dBf
FM Stereo Separation	32 dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

Source Units - DFZ675MC/DRZ9255

DFZ675MC

CD/MP3/WMA 2-DIN RECEIVER WITH CENET CONTROL AND MUSIC CATCHER II

- 2 Year Warranty
- Vacuum Fluorescent Display
- Plays CD, CD-R & CD-RW
- MP3 and WMA decoding with ID3 tag display
- CeNET control for DVD Changer (Easy), TV Tuner, 6-Disc CD Changer, Satellite radio tuner and iPod Interface.
- 4-Channel 2-Volt RCA Output
- Front Panel 3.5mm Auxiliary Input
- Front Panel SD Card Slot
- Music Catcher II digital recorder with 4x record speed
- 200W MOSFET Amplifier (50W x 4)
- Digital Z-Enhancer
- Magna Bass EX
- Random Play, Intro Scan, Track Repeat
- Rotary Volume Control
- 18 FM/6 AM Presets
- Adjustable Display Contrast
- Built-In Amp Canceller
- IR Remote Control

Specifications

Maximum Power Output	50 Wrms x 4
CEA-2006 Power Output	19 Wrms x 4
Line Level Output Voltage	2.0Vrms
CD Signal to Noise Ratio	81dB 1W into 4 Ohms
CD Frequency Response	10Hz to 20KHz (±1dB)
CD Dynamic Range	95 dB
Harmonic Distortion	0.01%
FM Frequency Range	87.9 MHz to 107.9 MHz
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	9 dBf
FM 50 dB Quieting Sensitivity	15 dBf
FM Stereo Separation	35 dB
MP3 Formats	MPEG 1, 2 and 2.5-Layer 3

DRZ9255

PROAUDIO AM/FM CD PLAYER WITH CENET, TIME ALIGNMENT, PARAMETRIC EQ AND 4-WAY CROSSOVER

- Dual 24-Bit Burr Brown 96kHz D/A Converters
- Digital Time Alignment for each channel with 0.7cm (1/4") steps
- 4-Way electronic crossovers - 6, 12 or 18dB Slopes, bandpass on Sub, Low and Midrange outputs
- 5-Band Parametric Equalizer with presets
- 0.5dB/Step Burr Brown Zero-Crossing volume control
- CeNET Control of CD Changer, DVD Changer, TV Tuner and iPod Interface
- Copper Plated chassis for EFI Noise rejection
- 8-Volt, 4-channel Gold Plated preamp outputs with OFC cables
- Two Auxiliary inputs
- External 30V DC/DC converter power supply
- Fiber Optic input for CD/DVD changer
- Vacuum Fluorescent Display
- IR Remote Control
- MagiTune+ AM/FM Tuner
- Zinc Die-Cast Faceplate

Specifications

Maximum Power Output	N/A
CEA-2006 Power Output	N/A
Line Level Output Voltage	8.0Vrms
CD Signal to Noise Ratio	100 dB
CD Frequency Response	5Hz to limits of CD
CD Dynamic Range	95 dB
FM Frequency Response	30Hz to 15kHz
FM Usable Sensitivity	9 dB
FM 50 dB Quieting Sensitivity	15dB
FM Stereo Separation	35dB

Source Units – ADB340MP/XA311 Information

ADB340MP

AM/FM CD/MP3 CASSETTE PLAYER WITH TWO-DIN CHASSIS

FEATURES

- Flip-Down Faceplate
- Plays CD-R and RWs
- Plays MP3-Encoded CDs
- Full-Logic Cassette Player with Auto Reverse
- 3-Band Graphic EQ
- LCD With Spectrum Analyzer
- 2-Channel RCA Line-Level Output
- 2-Channel Auxiliary Input
- 200 W Amplifier (50 W x 4)
- Radio Tuner with 18 FM/6 AM Presets
- CD Text and CD Titling

Replacement Part

Wire Harness 854-634-950

Specifications

FM Useable Sensitivity. . . . . 11 dB
FM 50 dB Quieting Sensitivity . . . . . 17 dB
FM Alternate Channel Selectivity . . . . . 70 dB
FM Stereo Separation . . . . . 35 dB

FM Stereo Frequency Response. . . . . .30 Hz to 15 kHz
CD Signal-to-Noise Ratio. . . . . 100 dB

CD Frequency Response. . . . . .10 Hz to 20 kHz
CD Dynamic Range . . . . . 95 dB

Tape Wow and Flutter . . . . . 0.06 %
Tape Channel Separation. . . . . 45 dB
Tape Signal-to-Noise Ratio, Metal Tape,
Dolby B Noise Reduction. . . . . 67 dB
Tape Frequency Response, Metal Tape . . .30 Hz to 20 kHz
Maximum Power Output . . . . . .50 W x 4
Continuous Power Output . . . . . .17 W x 4
Line-Level Output Voltage . . . . . .1.8 V

XA311

AM/FM CASSETTE PLAYER WITH CD CHANGER CONTROLLER AND DIN CHASSIS

FEATURES

- Magi-Tune Tuner with 20 FM/5 AM Presets
- Rotary Volume Control
- Z-Enhancer EQ Selector
- Green LCD Display
- C-Bus Changer Control
- 160 W Amplifier (40 W x 4)
- Auto Reverse

Optional Changer

DC625

Replacement Part

Wire Harness 854-634-950

Specifications

FM Useable Sensitivity. . . . . 11 dB
FM 50 dB Quieting Sensitivity . . . . . 17 dB
FM Alternate Channel Selectivity . . . . . 75 dB
FM Stereo Separation . . . . . 35 dB

FM Stereo Frequency Response. . . . . .30 Hz to 15 kHz
Tape Wow and Flutter . . . . . 0.08 %
Tape Channel Separation. . . . . 45 dB
Tape Signal-to-Noise Ratio, Metal Tape,
No Noise Reduction . . . . . 58 dB
Tape Frequency Response, Metal Tape . . .30 Hz to 20 kHz
Maximum Power Output . . . . . .40 W x 4
Continuous Power Output . . . . . .14 W x 4

Source Units – DCZ625/DC625 CD Changers

DCZ625

CENET 6-DISC CD CHANGER

Features

- 6-Disc Magazine
- Plays CD-R/RW Discs
- CeNET Control
- Zero-Bit Detector Mute
- Horizontal or Vertical Mounting Capability
- Fiber-Optic Digital Output
- CD Text and CD Titling
- Magazine: CAA397

Specifications

CD Channel Separation . . . . . 85 dB
CD Signal-to-Noise . . . . . 100 dB
CD Frequency Response. . . . . .5 Hz to 20 kHz
CD Dynamic Range . . . . . 94 dB
Dimensions (h x l x d). . . . . 2-1/2" x 9" x 6-5/8"

DC625

C-BUS 6 DISC CD CHANGER

Features

- 6 Disc Magazine
- Plays CD-R/RW Discs
- C-Bus Control
- Zero-Bit Detector Mute
- Horizontal or Vertical Mounting Capability
- Magazine: CAA397

Specifications

CD Channel Separation . . . . . 85 dB
CD Signal-to-Noise . . . . . 100 dB
CD Frequency Response. . . . . .5 Hz to 20 kHz
CD Dynamic Range . . . . . 94 dB
Dimensions (h x l x d). . . . . 2-1/2" x 9" x 6-5/8"

Source Units – FMC250/Accessory Information

FMC250

FM MODULATOR/CD CHANGER CONTROL

FEATURES

- 12 FM Frequencies (switchable)
- C-Bus Control and communication
- Output Level Control
- IR Remote Control RCB131

WORKS WITH C-BUS CHANGERS ONLY

CD Changer Magazines

CAA397
6-DISC MAGAZINE FOR DCZ625, DC625, VCZ625

CAA355
6 DISC MAGAZINE FOR CDC655TZ, CDC635, AND XM655-RET

CAA134
3-PACK/ONE EACH RED, WHITE, AND BLUE 6-DISC MAGAZINE FOR CDC1255Z AND CDC1235

CAA122
ONE BLACK 6-DISC MAGAZINE FOR CDC1255Z AND CDC1235

CeNET Cables

CCA519
CENET Y-ADAPTER FOR MULTI-CHANGER CONNECTION

CCA520
8' CENET CD CHANGER (EXTENSION) CABLE, MALE-TO-FEMALE

CCA521
20.5" CENET CD CHANGER (EXTENSION) CABLE, MALE-TO-FEMALE

CAA561
16' CENET CD CHANGER (REPLACEMENT) CABLE, MALE-TO-MALE

C-Bus Cables

CCA273
5' C-BUS CHANGER CABLE, MALE-TO-MALE

CCA306
20" C-BUS CHANGER CABLE, ANGLE MALE-TO-STRAIGHT FEMALE

CCA308
16' C-BUS CD CHANGER (EXTENSION) CABLE, MALE-TO-FEMALE

CCA329
16' C-BUS CD CHANGER (REPLACEMENT) CABLE, MALE-TO-MALE

CCA350
5' C-BUS CD CHANGER CABLE, ANGLE MALE-TO-ANGLE MALE

Digital Cables

DCA001
16' FIBER-OPTIC CABLE (OLD CLARION CONNECTORS)

DCA002
5' FIBER-OPTIC CABLE (OLD CLARION CONNECTORS)

DCA005
16' FIBER-OPTIC CONNECTOR WITH NEW CLARION CONNECTORS ON BOTH ENDS

DCA008
5' FIBER-OPTIC CONNECTOR WITH NEW CLARION CONNECTORS ON BOTH ENDS

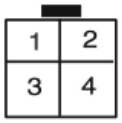
DCA006
16' FIBER-OPTIC CONNECTOR WITH OLD CLARION CONNECTORS ON SOURCE UNIT END AND NEW CLARION CONNECTOR ON PROCESSOR END.

DCA007
16' FIBER-OPTIC CONNECTOR WITH NEW CLARION CONNECTORS ON SOURCE UNIT END AND OLD CLARION CONNECTOR ON PROCESSOR SIDE (FOR VRX925VD, VRX935VD, OR VS735 TO CONNECT TO DVS9755Z DVD PLAYER)

Clarion Wiring Molex

(View is from the Wire Side)

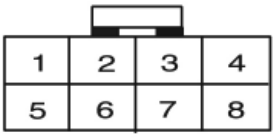
4 Pin



Part #
993-502-230

Pin	Color	Description
1	Blue/White	Amp Control
2	Blue/White	Remote In
3	Yellow	12vt Constant
4	Black	Ground

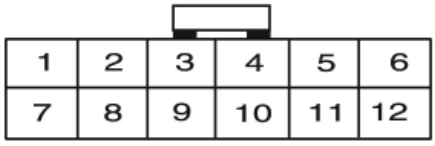
8 Pin



Part #
854-632-082

Pin	Color	Description
1	Blue/White	Remote Turn-on
2	Red	12vt Accessory
3	Pink/White	Digital Switch
4	N/A	
5	Black	Chassis Ground
6	Yellow	12vt Constant
7	N/A	
8	Brown	Phone Mute (-)

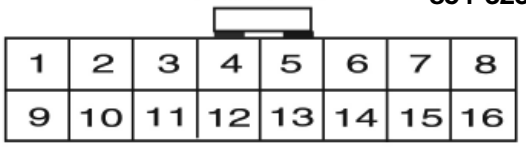
12 Pin



Part #
993-502-360

Pin	Color	Description
1	Green	LR +
2	White	LF+
3	Violet	RR+
4	Grey	RF+
5	Blue/White	Remote Turn on
6	Red	12vt Accessory
7	Green/Black	LR-
8	White/Black	LF-
9	Violet/Black	RR-
10	Grey/Black	RF-
11	Black	Chassis Ground
12	Yellow	12vt Constant

16 Pin

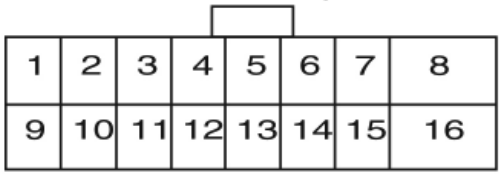


Part #
854-3232-01

Pin	Color	Description
1	Grey/Black	RF-
2	Grey	RF+
3	Violet/Black	RR-
4	Violet	RR+
5	Blue/White	Remote Turn On
6	Red	12vt Accessory
7	N/A	
8	N/A	
9	White/Black	LF-
10	White	LF+
11	Green/Black	LR-
12	Green	LR+
13	Black	Chassis Ground
14	Yellow	12vt Constant
15	N/A	
16	Brown	Phone Mute (-)

16 Pin

For 1999 and up units



Part #
854-634-950

Pin	Color	Description
1	Green	LR+
2	White/Black	LF-
3	White	LF+
4	Grey	RF+
5	Grey/Black	RF-
6	Violet	RR+
7	Violet/Black	RR-
8	Yellow	12vt Constant
9	Green/Black	LR-
10	Brown	Phone Mute (-)
11	Red	12vt Accessory
12	Blue	Remote Turn On
13	Blue/White	Antenna Turn-on
14	Orange	Illiumination
15	Yellow	12vt Constant
16	Black	Chassis Ground

Multi-Zone Video System Diagram

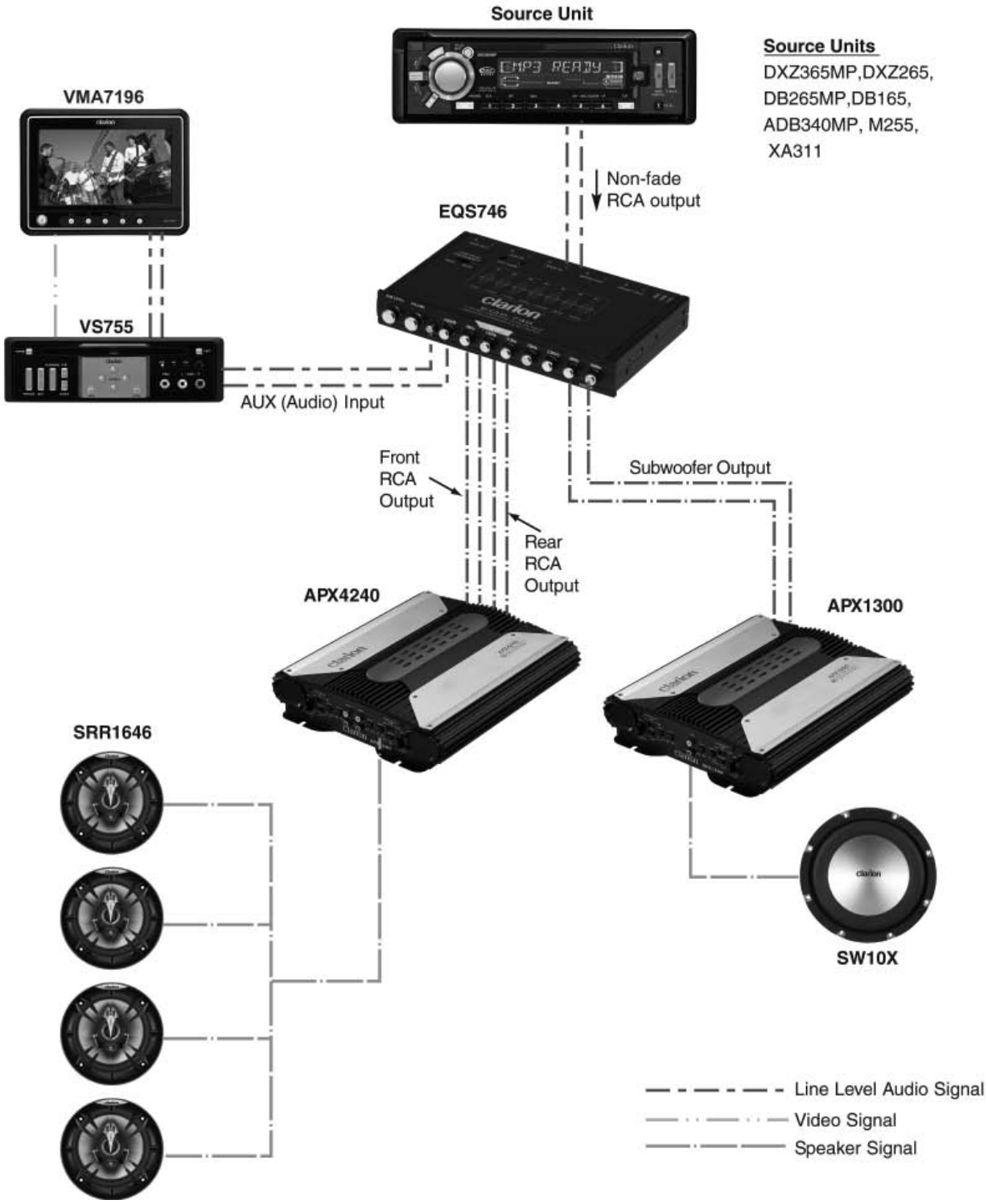
CD/DVD Player Error Codes

Problem	Cause	Measure
ERROR 2	A CD is caught inside the deck and is not ejected	This is a failure of the CD mechanism - consult your store of purchase
ERROR 3	A CD can not be played due to scratches, etc.	Replace with a non-scratched, non-warped disc.
ERROR 6	A CD is loaded upside down or can not be read	Eject the disc and insert it properly or consult your store of purchase

Music Catcher Error Codes

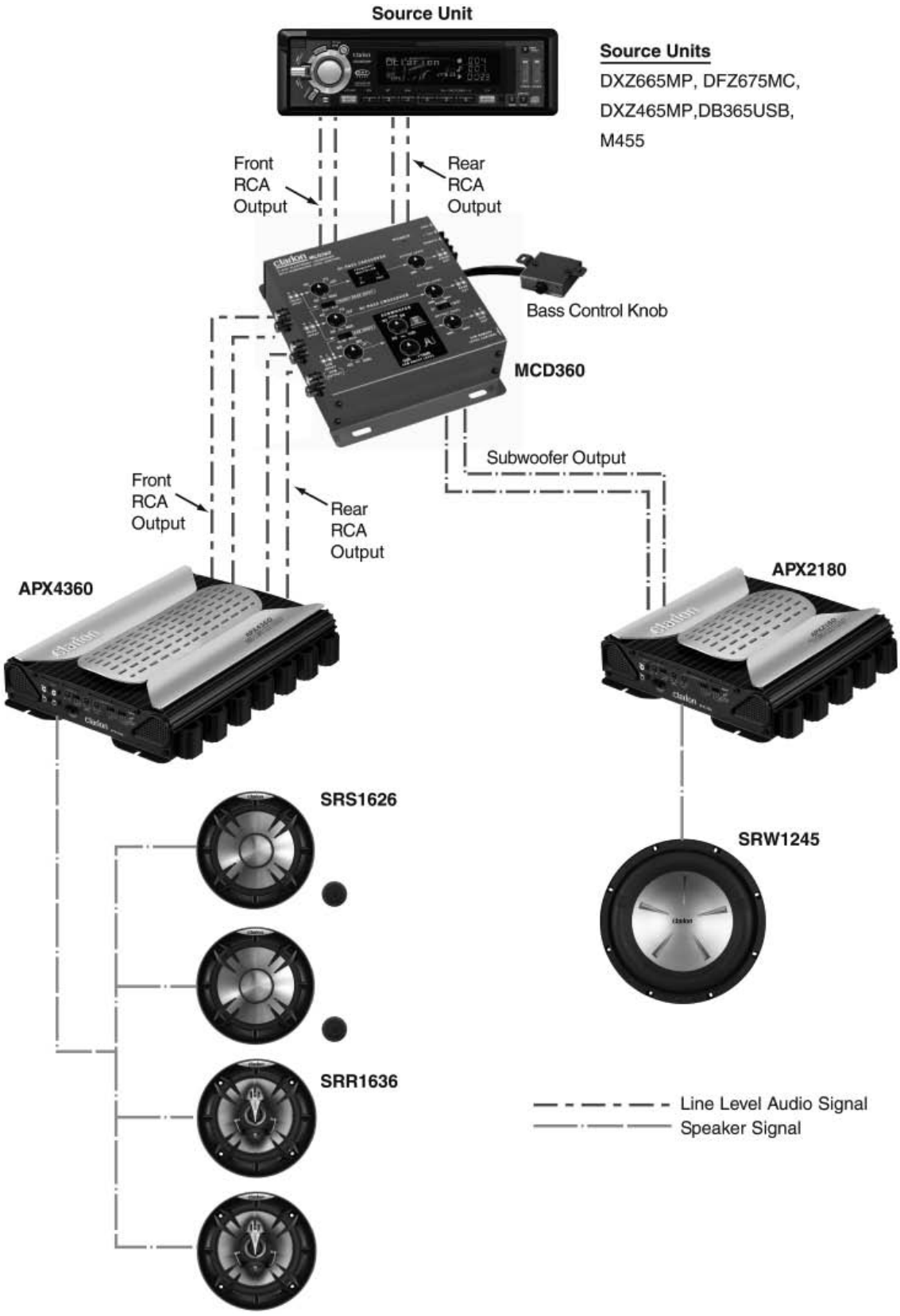
Error	Cause	Measure
ERROR 7	The format of the flash memory is damaged	Execute ALL ERASE on the flash memory
ERROR 8	There is a failure with the flash memory	Turn POWER/ACC off and back on
ERROR 9	An error occured during recording - scratch on the discs or error due to sound skips	Turn POWER/ACC off and back on. Re-record the music
PARENTAL VIOLATION	Viewing is limited	Release the viewing limitation by changing the parental level.

OHM106/OHM156 Split-Screen Multimedia System Diagram

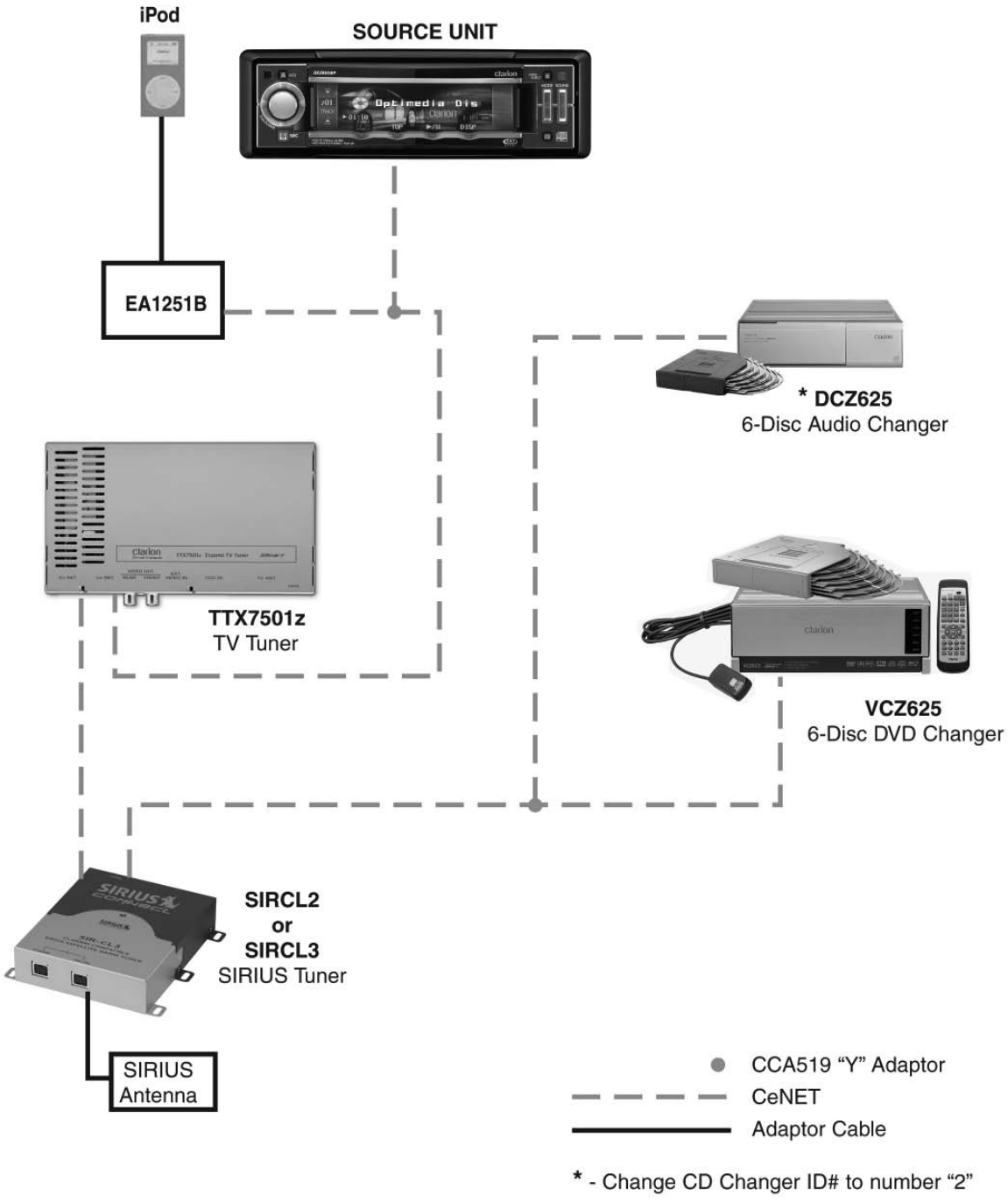


Source Units - System Applications

4-Channel Source Unit with MCD360 System Diagram



Source Units - CeNET System Applications



Clarion CeNET Connection Diagram

Satellite Radio

Sat Ready for 2006

New 2006 Clarion CeNET compatible source units are now SAT Radio ready. This means that you can choose from Sirius or XM Radio - giving you more than 200 different channels of entertainment to choose from.

How does Satellite Radio work?

Though the exact mechanism and placement of satellites varies between XM and Sirius, the concept is essentially the same. Both companies operate their own studios and program their own music. The broadcast is transmitted to a satellite (or satellites) orbiting above North America. The tuner in your car receives this digitally transmitted signal and provides you with more than 100 different choices of stations - many of which are commercial free. Both Sirius and XM are pay-for-use services.

SIRCL3 - SIRIUS Satellite Radio Receiver

This package includes Clarion's SIRCL3 receiver and Sirius Antenna and a CeNET cable. The receiver can be controlled using any CeNET-equipped source unit.

Features:

• CeNET interface for direct operation by all SIRIUS-Ready Clarion source units

• CeNET Pass-Through for Connection of

CD Changers and any other Clarion CeNET products.

XMDCLA100 and XMD1000 - XM Satellite Radio Receiver

Terk manufacture's a universal XM Radio receiver called the XMD1000. This connects to a Clarion SAT Ready source unit using the XMDCLA100 Smart Digital Adapter.

You must purchase BOTH the XMDCLA100 and XMD1000 to receive XM Radio

Features:

• Allows XM Radio to be seamlessly installed into the CeNET interface on a Clarion SAT Ready source unit.

•Provides access to up to 150 XM Radio channels.

• Direct Digital Connection for the best possible sound quality

•Includes Ultra Thin Micro Antenna

XMDCLA1000 XMDirect Smart Digital Adapter

XMD1000 XMDirect Tuner Box

Troubleshooting SIRCL1 and SIRCL2

Problem:

The display says 'linking' or 'acquiring' and has limited channel access.

Solution:

1. Unplug the CeNET cable or power connection, if DSC920S is used, from the satellite receiver for at least 1 hour.

2. Plug back in CeNET cable or power connection, if DSC920S is used, into the satellite receiver.

3. Turn On the source unit and select “SIRIUS” or DSC920S and allow the satellite receiver to download the critical updates that were either missed or interrupted during the transmission. The satellite antenna needs to have an unobstructed view to the sky and the power must not be interrupted. The downloading process can take from a minute to several minutes.

4. When the data transfer is complete, the satellite receiver will be returned to its normal operation.

Problem:

The satellite receiver has limited channel access when in use.

Solution:

1. Unplug the CeNET cable or power connection, if DSC920S is used, from the satellite receiver for at least 1 hour.

2. Plug back in CeNET cable or power connection, if DSC920S is used, into the satellite receiver.

3. Turn On the source unit and select “SIRIUS” or DSC920S and allow the satellite receiver to download the critical updates that were either missed or interrupted during the transmission. The satellite antenna needs to have an unobstructed view to the sky and the power must not be interrupted. The downloading process can take from a minute to several minutes.

4. When the data transfer is complete, the satellite receiver will be returned to its normal operation.

Both of these issues are the result of a missed or interrupted data transfer. Since there is no set schedule for the satellite updates, it is recommend to explain and demonstrate to the consumer how to reset their satellite receiver. You may also have to ask Sirius to retransmit the channel update to your receiver.

Amplifiers/ Processors

2006 Amplifier Line Overview

For 2006, Clarion has introduced an entirely new line of amplifiers, designed from the ground up to compliment one-another in terms of features, performance and design. The 2006 amplifier line takes a three tiered approach to features, technology and design.

Model	Class	Description	Power
APX2120	AB	2-Channel	2 x 60W
APX4240	AB	4-Channel	4 x 60W
APX1300	AB	Mono	1 x 300W
APX2180	AB	2-Channel	2 x 90W
APX4360	AB	4-Channel	4 x 90W
DPX2250	G	2-Channel	2 x 125W
DPX1800	G	Mono	1 x 800W
DPX11500	G	Mono	1 x 1500W

The entry-level amplifiers offer increased power production over the previous models, as well as featuring a cosmetic theme that integrates with the top two amp series. The feature set on our entry level amplifiers was designed to allow installers to get these amps installed into a vehicle quickly and tune them without the need for complex instruction manuals. These features allow for elaborate system design and configuration.

The top two series of amplifiers (Illuminated and Class G) are designed around a set of features that allow for more accurate installations, class leading transparency, dynamics, musicality and efficiency. The APX2180 and APX4360 offer benchmark sonic transparency, frequency and phase response and installation / configuration features. The new DPX amplifiers feature state-of-the-art Class G designs that offer the ultimate mix of sound quality and efficiency, minimizing the load on a vehicles electrical system.

Precise Frequency Selector Electronic Crossover

The inclusion of an electronic crossover in an amplifier allows for efficient setup and configuration of an audio system. It also allows that amplifier to be used with factory or after market source units that do not have electronic crossovers in them, either high- or low-pass.

One drawback of a conventional electronic crossover is that it can be difficult to precisely set the crossover frequency because the potentiometer is nearly infinitely adjustable. Also, many potentiometers are only labelled at the top and bottom of its frequency range, making selecting something in the middle even more difficult.

Clarion provides a simple and elegant solution to accurately setting crossover points with our ***PFS*** (Precise Frequency Selector) crossover adjustment. The potentiometer on the APX2180, APX4360, DPX2250, DPX1800 and DPX11500 has 41 detented positions. Using the chart supplied in the owner's manual of each amp, you can select a specific crossover frequency, then to set it, turn the adjustment potentiometer the according number of clicks, and you are done.

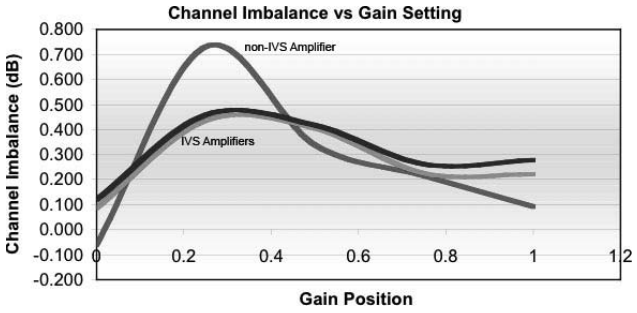
One of the many benefits of this feature surfaces when you are building a multi-amp system. With conventional crossover controls, you could end up setting a subwoofer amp to 70Hz when you were aiming for 85Hz and end up at 100Hz on the mids and highs amp. The result would be a system that lacks dynamics and sounds muddy. ***PFS*** makes accidental under- or over-lapping of crossovers a thing of the past.

Input Voltage Selector

Conventional gain adjustment systems have inherent limitations. Because users want a wide sensitivity range (0.2V to 8.0V for example), a conventional gain control creates large differences in left and right output - called channel imbalance. This is due to variances and tolerance

limitations on the potentiometer used to make the adjustment.

IVS dramatically reduced channel imbalance by implementing three discrete sensitivity ranges, 0-0.6v, 0.6-2v, 2-8v. The result is a reduction in maximum potential channel imbalance, better imaging and a more accurate soundstage.



This graph shows the amount of channel imbalance from two identical amplifiers, one with IVS and one without, The curve with the large bump is the amplifier without IVS and reaches a maximum channel imbalance of 0.75dB at 0.25% of maximum gain. The two overlapping curves show the channel imbalance of an IVS-equipped amp at the 0.6-2V and 2V-8V settings. The maximum imbalance is only 0.45dB - half of the non-IVS amplifier.

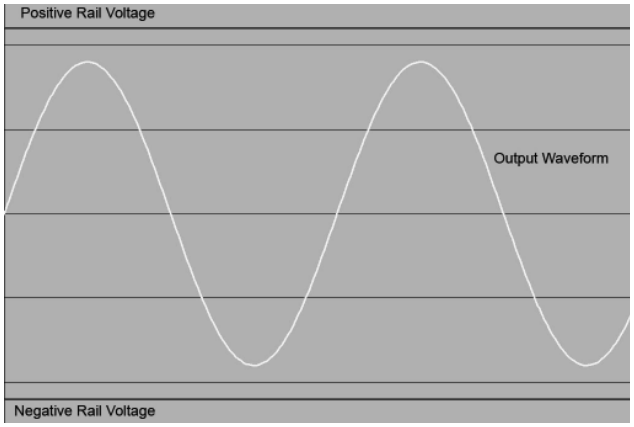
Why not individual gain controls? While individual gain controls can offer very accurate sensitivity settings, an installer MUST use an oscilloscope or voltmeter to properly set these controls for accurate channel to channel output. Clarion has made every effort possible to reduce installation time and complexity.

Class G Amplifiers

Amplifier efficiency has never been more important than it is in today's modern vehicles. Alternators, batteries and factory wiring are smaller than ever, in efforts to produce the lightest and most fuel efficient vehicles possible.

For 2006, Clarion introduces a full line of Class G amplifiers. These amplifiers are the results of years of design and testing, and offer the optimum balance of sound quality and efficiency - exactly what a Clarion customer demands.

The operation of a Class G amplifier is very simple. Traditional amplifiers use a Class AB output device topology. Essentially, there are a set of switching devices (transistors) for the positive half of the waveform and another set for the negative half of the waveform. These devices operate linearly, passing more current through them as more signal is sent to them. The drawback with a Class AB topology is that the output devices operate in their resistive region, rarely fully on or off. This results in a great deal of heat being generated and energy wasted. Around a decade ago, the introduction of Class D amplifiers to the car audio market showed a marked improvement in amplifier efficiency at the expense of sound quality and control. Class D amplifiers operate by cycling the output devices fully on and off very quickly, and adjusting the on vs off time to effect a change in output level. One of the many drawbacks of Class D amplifiers is that they require large filtering networks after the output stage to clean up the signal and remove high frequency switching noise. Also, Class D amplifiers can cause significant electrical interference that can affect radio reception.

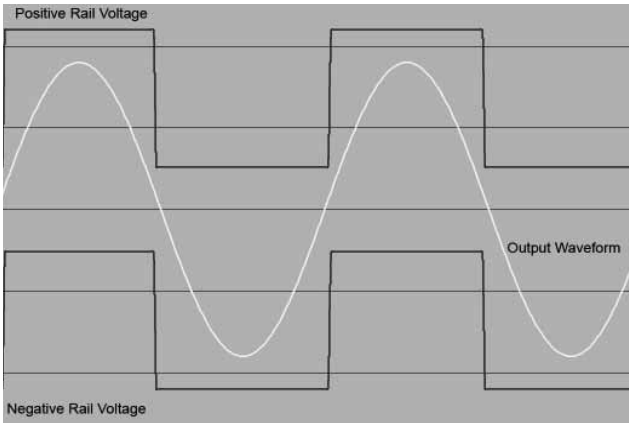


Class AB Amplifier
Blue - Power Supply Voltage
Yellow - Output Waveform

A Class G amplifier is truly the best of both worlds. Clarion's new Class G DPX amplifiers use a Class AB output stage with a hybrid Class G multi-voltage power supply. The result is tight, controlled, dynamic power output with excellent amplifier efficiency.

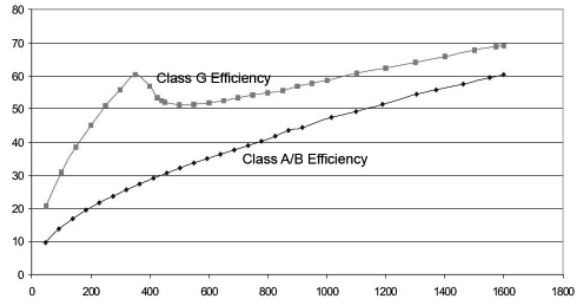
Amplifiers – Technologies

How does Class G work? Think of the new Dodge Hemi or Cadillac Northstar engines. These engines have the ability to shut down a number of cylinders to reduce fuel comsumption and heat generation. The power supply of a Class G amplifiers works in exactly the same way. When you aren't cranking on the amp, the power supply rail voltage turns down. The effect, less current is passed through the output devices, dramatically reducing wasted power.



Class G Amplifier
Blue - Power Supply Voltage
Yellow - Output Waveform

The graph below compares the efficiency of a conventional Class AB 1500W amp to our DPX11500 1500W amplifier. You can see that around 350W DPX11500 is ~65% efficient, whereas the conventional Class AB is merely 25% efficient. This means, that the DPX11500 is drawing only 37A of current, where the Class AB amp would be drawing closer to 97A of current.



Automatic Impedance Matching
The Clarion DPX1800 and DPX11500 amplifiers feature an automatic impedance sensing circuit that allows the amp to produce full power into 1 or 2 Ohm loads. This allows a retailer to sell this amp to a customer with almost any combination of speaker impedances, and know that they will get full power from the amplifier.

This new impedance matching circuit operates invisibly to the installer. No switches need to be set, no adjustments need to be made. Connect the speakers and go.

Strappable Power
The DPX1800 and DPX11500 amplifiers are both strappable. This means, a pair of amplifiers can be used on a single voice coil to provide additional power production for extreme SPL levels. A pair of DPX1800 amplifiers would produce 1,600W into a 2 or 4 Ohm load, and a pair of DPX11500 would produce 3,000W into a 2 or 4 Ohm load.

Remote Bass Control
The new Clarion DPX1800 and DPX11500 amplifiers ship with a Remote Bass Control module. This allows you to install a subwoofer level control in the front of your vehicle and control the low frequency system even when connected to a source unit (factory or aftermarket) that does not include a subwoofer output level control.

Adjustable Subsonic Filter
Clarion's new DPX1800 and DPX11500 amplifiers feature an adjustable subsonic filter. This filter is adjustable from 10Hz to 80Hz using a potentiometer on the end panel of the amplifier.

When using subwoofers in vented cabinets with high tuning frequencies (above 35Hz), physical power handling of the driver may easily be exceeded. The use of a subsonic filter will limit the amount of ultra-low frequency information being passed through to the speaker, as well as reduce the amount of power the amplifier consumes in amplifying those low frequencies.

Mixed-Mode Operation
Clarion amplifiers use an inverting circuit that allows a single 2-channel amplifier to drive multiple satellite speakers in stereo and a subwoofer in a bridged-mono configuration.

Mixed-mode operation allows greater system flexibility with a single 2-channel amplifier. When used in conjunction with passive crossover components, a Clarion amplifier is capable of mixed mode operation that can power an entire audio system.

Multi-Channel Amplifiers
Clarion's multi-channel amplifiers provide four channels of amplification from one chassis. Moreover, all models are equipped with on-board high-pass/low-pass electronic crossovers.

This configuration provides maximum system flexibility using a single-amplifier chassis. For example, the front channels can drive full-range speakers with front crossovers off, while rear channels are set to low-pass and bridged to drive a single subwoofer. Or the front channels can be set to high-pass to drive a pair of satellites, and rear channels set to low-pass to drive a pair of woofers.

The use of a four channel amplifier and their active crossovers provides quicker setup times and better efficiency. Passive crossover networks typically reduce the power arriving at the speakers by 2-4dB.

Amplifier Circuit Information
All of Clarion's amplifiers contain complex circuitry in both the input and output sections for noise suppression, fast transient response and minimum distortion. These circuits include high-impedance differential input stages, and premium devices with very high slew rates.

High-impedance differential input stages separate the input signal ground from the common chassis ground. This creates a very effective ground-loop isolation circuit that reduces the possibility of charging system noise from entering the signal path. The circuit then compares the signal information on the shield to that of the centre conductor and eliminates any common signal (noise), leaving only clear and detailed music.

This advanced circuit topology ensures that Clarion amplifiers will accurately reproduce all the dynamics and subtleties found in today's digital recordings. At the same time, noise suppression circuits work to effectively to eliminate induced electrical system noise, contributing to maximum dynamic range.

Gold-Plated RCA Connectors
Superior conductivity is achieved by using gold-plated RCA terminals to minimize the contact resistance and reduce noise. Moreover, since non-magnetic gold is not affected by external magnetic fields, magnetic distortion is also prevented.

Specifications
Clarion has spent a significant amount of time ensuring that our amplifiers provide the best possible sonic performance. A look at the specifications associated with any of our amplifiers quickly demonstrates this dedication to purist performance.

Frequency Response
Clarion takes great pride in the fact that our amplifiers offer frequency response well beyond the audible spectrum. This ensures perfectly linear output with no emphasis in any region. It also moves the phase shift commonly associated with high frequency roll-off out of the audible range. The APX4360 and APX2180 feature 10Hz-50kHz frequency response within 1dB - not the usual 3dB rating lesser products use.

PFS Crossover Charts

Please use the following charts to set the crossover frequency on the APX2180, APX4360 and DPX2250 amplifiers.

Position	Crossover Frequency
1	49
2	49
3	50
4	50
5	51
6	52
7	52
8	55
9	60
10	65
11	80
12	85
13	90
14	100
15	125
16	140
17	155
18	165
19	175
20	178
21	180
22	200
23	210
24	220
25	230
26	250
27	280
28	300
29	325
31	410
32	420
33	455
34	475
35	495
36	500
37	510
38	520
39	530
40	540
41	550

Please use the following charts to set the crossover frequency on the DPX1800 and DPX11500 amplifiers.

Position	Crossover Frequency
1	24
2	24
3	24
4	24
5	24
6	25
7	27
8	30
9	33
10	35
11	40
12	43
13	50
14	55
15	60
16	65
17	70
18	75
19	77
20	82
21	86
22	90
23	95
24	100
25	110
26	120
27	125
28	130
29	150
30	155
31	160
32	165
33	175
34	175
35	180
36	180
37	185
38	190
39	195
40	200
41	200

Amplifiers - Specifications

DPX11500

1 CHANNEL CLASS G MONO AMPLIFIER

Features

- Input Voltage Selector Input Stage
- Precise Frequency Selector Crossover
- Adjustable High/Low-Pass Crossover (30Hz to 250Hz, 12 dB/octave)
- Adjustable Subsonic Filter (10Hz to 50Hz)
- Variable Bass Boost Control (0 to 15dB, 30-125Hz)
- Strappable
- Auto Impedance Selection (full power at 1 or 2 Ohms)
- MOSFET Power Supply
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker/Power Connectors

Specifications

Number of Channels 1
Frequency Response (±1.0dB) . . . . . 16 Hz to 150Hz
Signal-to-Noise Ratio (CEA-2006) . . . . . ≥ 100 dB
THD@ Rated Output. . . . . <0.1 %
Input Sensitivity . . . . . 0.2 to 0.6 V
. . . . . 0.6 to 2.0V
. . . . . 2 to 8V
High Level Input Sensitivity . . . . . 0.4v to 1.2V
. . . . . .1.2 to 4V
. . . . . 4 to 16V
Bass Boost . . . . . 0 -15dB @ 45Hz
Power Output @ 1 Ohm (CEA-2006) 1500W
Power Output @ 2 Ohms (CEA-2006) 1500W
Power Output @ 4 Ohm (CEA-2006) 800W
Dimensions (l x w x h) . . . . . 21-1/4" x 12" x 2 -7/8"

DPX1800

1 CHANNEL CLASS G MONO AMPLIFIER

Features

- Input Voltage Selector Input Stage
- Precise Frequency Selector Crossover
- Adjustable High/Low-Pass Crossover (30Hz to 250Hz, 12 dB/octave)
- Adjustable Subsonic Filter (10Hz to 50Hz)
- Variable Bass Boost Control (0 to 15dB, 30-125Hz)
- Strappable
- Auto Impedance Selection (full power at 1 or 2 Ohms)
- MOSFET Power Supply
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker/Power Connectors

Specifications

Number of Channels 1
Frequency Response (±1.0bB) . . . . . 16 Hz to 150Hz
Signal-to-Noise Ratio (CEA-2006) . . . . . ≥ 79 dB
THD@ Rated Output. . . . . <0.1 %
Input Sensitivity . . . . . 0.2 to 0.6 V
. . . . . 0.6 to 2.0V
. . . . . 2 to 8V
High Level Input Sensitivity . . . . . 0.4v to 1.2V
. . . . . .1.2 to 4V
. . . . . 4 to 16V
Bass Boost . . . . . 0 -15dB @ 45Hz
Power Output @ 1 Ohm (CEA-2006) 800W
Power Output @ 2 Ohms (CEA-2006) 800W
Power Output @ 4 Ohm (CEA-2006) 450W
Dimensions (l x w x h) . . . . . 19-1/4" x 12" x 2 -7/8"

Amplifiers - Specifications

DPX2250

2/1 CHANNEL CLASS G AMPLIFIER

Features

- Input Voltage Selector Input Stage
- Precise Frequency Selector Crossover
- Adjustable High/Low-Pass Crossover (50Hz to 550Hz, 12 dB/octave)
- Variable Bass Boost Control (0 to 15dB @ 50Hz)
- Bridgeable
- MOSFET Power Supply
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker/Power Connectors

Specifications

Number of Channels 2
Frequency Response (±1.0dB) . . . . . 18 Hz to 30kHz
Signal-to-Noise Ratio (CEA-2006) . . . . . ≥ 80 dB
THD@ Rated Output. . . . . 0.1 %
Input Sensitivity . . . . . 0.2 to 0.6 V
. . . . . 0.6 to 2.0V
. . . . . 2 to 8V
High Level Input Sensitivity . . . . . 0.4v to 1.2V
. . . . . .1.2 to 4V
. . . . . 4 to 16V
Bass Boost . . . . . 0 -15dB @ 45Hz
Power Output @ 4 Ohm Stereo (CEA-2006) . . . . . 125W x 2
Power Output @ 2 Ohms Stereo (CEA-2006) . . . . 200W x 2
Power Output @ 4 Ohm Mono (CEA-2006) . . . . . 400W x 1
Dimensions (l x w x h) . . . . . 13-1/4" x 12" x 2 -7/8"

APX4360

4/3/2 CHANNEL ILLUMINATED-SERIES AMPLIFIER

Features

- Input Voltage Selector Input Stage
- Precise Frequency Selector Crossover
- Independant Adjustable Front and Rear High/Low-Pass Crossover (55Hz to 5.5 kHz, 12 dB/octave with Crossover Frequency Mulitplier)
- Variable Bass Boost Control (0 to 15dB @ 50Hz)
- Bridgeable
- MOSFET Power Supply
- F/R input select switch
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker/Power Connectors

Specifications

Number of Channels 4
Frequency Response (±.3dB) . . . . . 10 Hz to 50kHz
Signal-to-Noise Ratio (CEA-2006) . . . . . ≥ 93 dB
THD@ Rated Output. . . . . 0.05 %
Input Sensitivity . . . . . 0.2 to 0.6 V
. . . . . 0.6 to 2.0V
. . . . . 2 to 8V
High Level Input Sensitivity . . . . . 0.4v to 1.2V
. . . . . .1.2 to 4V
. . . . . 4 to 16V
Bass Boost . . . . . 0 -15dB @ 50Hz
Power Output @ 4 Ohm Stereo (CEA-2006) . . . . . 90W x 4
Power Output @ 2 Ohms Stereo (CEA-2006) . . . . 160W x 4
Power Output @ 4 Ohm Mono (CEA-2006) . . . . . 300W x 2
Dimensions (l x w x h) . . . . . 16" x 12" x 2 -7/8"

APX2180

2/1 CHANNEL ILLUMINATED SERIES AMPLIFIER

Features

- Input Voltage Selector Input Stage
- Precise Frequency Selector Crossover
- Adjustable High/Low-Pass Crossover (55Hz to 5.5 kHz, 12 dB/ octave with Crossover Frequency Mulitplier)
- Variable Bass Boost Control (0 to 15dB @ 50Hz)
- Bridgeable
- MOSFET Power Supply
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker/Power Connectors

Specifications

Number of Channels 2
Frequency Response (±.3dB) . . . . . .10 Hz to 50kHz
Signal-to-Noise Ratio (CEA-2006) . . . . . .≥ 93 dB
THD@ Rated Output. . . . . 0.05 %
Input Sensitivity . . . . . .0.2 to 0.6 V
. . . . . 0.6 to 2.0V
. . . . . 2 to 8V
High Level Input Sensitivity . . . . . 0.4v to 1.2V
. . . . . .1.2 to 4V
. . . . . 4 to 16V
Bass Boost . . . . . .0 -15dB @ 50Hz
Power Output @ 4 Ohm Stereo (CEA-2006) . . . . . 90W x 2
Power Output @ 2 Ohms Stereo (CEA-2006) . . . . . 150W x 4
Power Output @ 4 Ohm Mono (CEA-2006) . . . . . 300W x 2
Dimensions (l x w x h) . . . . . .12" x 12" x 2 -7/8"

APX1300

1 CHANNEL AMPLIFIER

Features

- Adjustable Low-Pass Crossover (50Hz to 300Hz, 12 dB/octave)
- Selectable Bass Boost (0dB, 6dB, 12dB)
- MOSFET Power Supply
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker Connectors

Specifications

Number of Channels 1
Frequency Response (±.3dB) . . . . . .10 Hz to 300Hz
Signal-to-Noise Ratio (CEA-2006) . . . . . .≥ 85 dB
THD@ Rated Output. . . . . .<0.1 %
Input Sensitivity . . . . . .0.2V to 5.5V
High Level Input Sensitivity . . . . . .2 to 16V
Bass Boost 0, 6dB, 12dB
Power Output @ 2 Ohm (CEA-2006) . . . . . .500W x 1
Power Output @ 4 Ohms (CEA-2006) . . . . . .300W x 1
Dimensions (l x w x h) . . . . . .13" x 10-7/8" x 2 -3/4"

Amplifiers - Specifications

APX4240

4/3/2 CHANNEL AMPLIFIER

Features

- Independantly Adjustable Front and Rear High/Low-Pass Crossovers(50Hz to 300Hz, 12 dB/octave)
- Selectable Bass Boost (0dB, 6dB, 12dB)
- MOSFET Power Supply
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker Connectors

Specifications

Number of Channels 4
Frequency Response (±.3dB) . . . . . .20 Hz to 30kHz
Signal-to-Noise Ratio (CEA-2006) . . . . . .≥ 80 dB
THD@ Rated Output. . . . . <0.1 %
Input Sensitivity . . . . . 0.2V to 5.5V
High Level Input Sensitivity . . . . . 2 to 16V
Bass Boost . . . . . .0, 6dB or 12dB
Power Output @ 4 Ohms Stereo (CEA-2006) . . . . . 60W x 4
Power Output @ 2 Ohms Stereo (CEA-2006) . . . . . 90W x 4
Power Output @ 4 Ohms Mono (CEA-2006). . . . . 200W x 2
Dimensions (l x w x h) . . . . . 13" x 10-7/8" x 2 -3/4"

APX2120

2/1 CHANNEL AMPLIFIER

Features

- Adjustable High/Low-Pass Crossovers (50Hz to 300Hz, 12 dB/octave)
- Selectable Bass Boost (0dB, 6dB, 12dB)
- MOSFET Power Supply
- Speaker Level Inputs
- Double Sided FR4PC Board
- Gold-Plated RCA/Speaker Connectors

Specifications

Number of Channels 2
Frequency Response (±.3dB) . . . . . .20 Hz to 30kHz
Signal-to-Noise Ratio (CEA-2006) . . . . . .≥ 85 dB
THD@ Rated Output. . . . . <0.1 %
Input Sensitivity . . . . . 0.2V to 5.5V
High Level Input Sensitivity . . . . . .2 to 16V
Bass Boost . . . . . .0, 6dB or 12dB
Power Output @ 4 Ohms Stereo (CEA-2006) . . . . . .60W x 2
Power Output @ 2 Ohms Stereo (CEA-2006) . . . . . .100W x 4
Power Output @ 4 Ohms Mono (CEA-2006). . . . . .200W x 2
Dimensions (l x w x h) . . . . . 10-5/8" x 10-7/8" x 2 -3/4"

EQS7461

1/2-DIN GRAPHIC EQUALIZER/CROSSOVER

Features

- 7-Band Graphic Equalizer
- Front panel selectable Main/Auxiliary Inputs
- Front/Rear output with fader and subwoofer output with subwoofer level control
- Selectable Subwoofer Low-Pass Frequency at 60 or 90 Hz
- 6-Channel/7-Volt RCA Line-Level Output
- Auxiliary input sensitivity
- Blue Illumination

Specifications

Frequency Response . . . . . .10 Hz to 50 kHz
Signal-to-Noise Ratio . . . . . 100 dB
Output Voltage . . . . . .7.0 Vrms
Center Frequencies 50Hz, 125Hz, 125Hz, 315Hz, 750Hz, 2.2kHz, 6kHz, 16kHz
Dimensions (w x h x d). . . . . .7" x 1-1/8" x 4-1/16"

MCD360

3-WAY ELECTRONIC CROSSOVER

Features

- 18 dB/Octave Slope-Variable Crossovers
- Front, Rear and Subwoofer Outputs with Level Controls
- Built-in Bass EQ
- Super-Flexible Design
- Remote Subwoofer Level Control
- Crossover-Frequency Multiplier Switch
- 2/4/6 Channels of Input
- Separate Front and Rear Crossover Points

Specifications

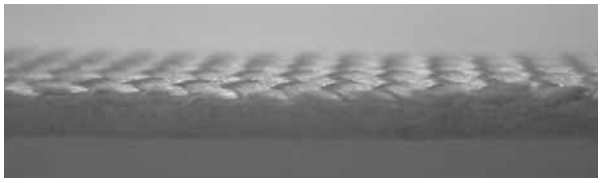
Frequency Response . . . . . .10 Hz to 50 kHz
Signal-to-Noise Ratio . . . . . 100 dB
High-Pass Frequency Range. . . . . .32 Hz to 8 kHz, Front
. . . . . .32 to 400 Hz, Rear
Subwoofer Equalizer Center Frequency . . . . . .25 to 100 Hz
Subwoofer Equalizer Boost . . . . . .0 to 18 dB
Dimensions (w x h x d). . . . . 5-1/2" x 1-3/4" x 5 -1/2"

Subwoofers

Signature Series Woofers

Clarion's dedication to reproducing music as it was originally played is taken to a new level with the introduction of the Signature Series line of speakers and Subwoofers. These products use the latest technologies to produce music that is dynamic, accurate and easy to listen to.

Composite Cone Design



The cone of any speaker must combine three important criteria to achieve accurate music production - Mass, damping and rigidity. The Composite Cone Design used on the Signature Series speakers is secret to their incredible performance. The cone is a sandwich of glass fibre and a PMI (Polymethacrylimide) foam cone. This cone is extremely low in mass, while being rigid and well damped at the same time.

Rubber Surround

Signature Series speakers feature a rubber surround for enhanced flexibility, low distortion and reliability.

Powder coated damped aluminum basket

Providing a stable platform for the speaker to work from is critical. The cast and powder coated aluminum baskets used in the signature series speakers feature a low resonance design and incredible strength.

Chrome-Plated Terminals

The speaker terminals are chrome-plated push on types with minimal contact resistance and high transmission efficiency.

3-Inch Aluminum Voice Coil

At the heart of the signature series woofers is a black anodized 3-Inch diameter voice coil former. This former helps wick heat away from the voice coil winding for improved power handling. The aluminum former doesn't add significant mass to the cone assembly, resulting in excellent dynamic response.

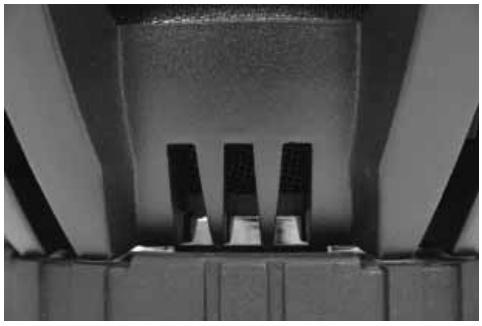
4-layer CCAW Voice Coil winding

The Signature Series subwoofers employ a four-layer Copper Clad Aluminum Wire winding design. This dual voice coil design is low in mass, but helps create an intense magnetic field, further improving transient response.

Dual Spider Design

Because of the massive amounts of power that the Signature Series subwoofer can handle, the design require two spiders to be used to ensure linear motion throughout the drivers range.

Subwoofers – Technologies



Spider Exhaust Technology
If you look at the base of the basket of a Signature Series subwoofer, you will see many mesh-protected vents. These vents serve two purposes. First and foremost, they allow hot air to escape from the voice coil, helping to improve power handling. These vents also relieve pressure from underneath the spider, reducing distortion.

High Excursion Design
Reproducing low frequencies at high levels requires that a significant amount of air be moved. The Signature Series subwoofers have an Xmax of 25.4mm (1-inch) for extreme low frequency output.

Bumped and Vented Pole Piece
The vent in the pole piece of the Signature Series subwoofers allows for the release of air pressure beneath the dust cap which allows for more linear cone motion. It also allows hot air to escape from the inside of the voice coil assembly - further improving the speakers ability to handle high levels of power. The bump provides additional space for the 3-inch aluminum voice coil to move up and down, providing linear speaker operation and incredible excursion capabilities.

PXW Subwoofers

Clarion proudly re-introduces the PXW line of subwoofers for 2006. These subwoofers have been designed from the ground up to offer the best possible performance, while featuring design characteristics found in speakers costing two to three times as much.

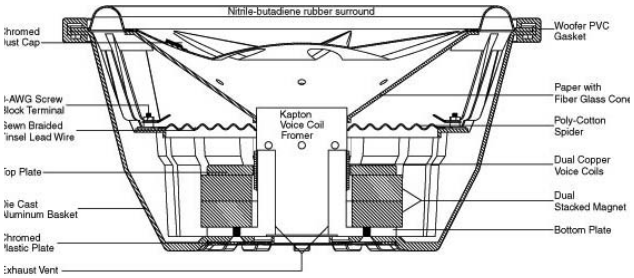
Custom Designed Die-Cast Aluminum Basket
The foundation of any subwoofer is its basket. This is what holds all the components in alignment, ensuring reliable and linear operation. The new Clarion PXW subwoofers feature a massive die-cast aluminum basket structure that looks formidable, while offering a rock-steady foundation for the motor and cone assemblies.

Spider Exhaust Technology
Keeping the voice coil assembly of a subwoofer cool is paramount to making sure the driver lasts and sounds good. As the motor assembly (voice coil, magnet, top and bottom plates) heat up, they become less efficient - this is known as power compression.

A speaker that can better dissipate heat will sound better and last longer. All Clarion subwoofers feature SET (Spider Exhaust Technology) cooling to allow heat generated from the voice coil assembly to escape from the area beneath the spider.

SET also allows pressurized air to escape from beneath the spider. This improves overall speaker linearity, especially at high excursion levels.

The PXW subwoofer allows hot air to escape through the spokes of the basket. If you look inside the basket, you can see that each spoke is hollow. This extends to below the spider mounting plateau, providing ventilation and cooling.



Dual Strontium Ferrite Magnets

There are many ways to alter the efficiency of a speaker. The most common is to adjust the magnetic field strength and the gap between the voice coil and top plate. Clarion has implemented dual high-quality Strontium Ferrite magnets in all PXW subwoofers. This provides an intense magnetic field for excellent efficiency, as well as controlled, dynamic performance.

An additional benefit of this large motor structure is its thermal mass. This helps dissipate heat from the voice coil to further improve performance.

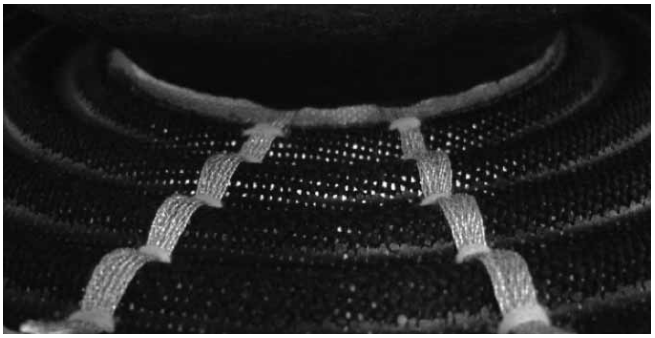
Hyper Extended Vented Pole Piece

The T-Yoke (Bottom plate) on all PXW subwoofers feature a large cooling vent that is protected by a mesh screen. This vent serves two purposes. It allows heated air to escape from the inside of the voice coil and allows pressurized air to escape from beneath the dust cap. The mesh screen keeps debris out of the delicate, narrow-gap voice coil gap area.

The bottom of the pole piece has been extended to allow increased excursion capabilities from the PXW subwoofers. Conventional designs result in the voice coil bumping into the bottom plate.

Dual Gold Plated Terminal Blocks

A solid electrical connection is mandatory to ensuring reliable speaker operation. The new PXW subwoofers feature custom-tooled terminal blocks that will secure up to an 8 AWG conductor. An Allen-key is included with each driver to make installation quick, easy and reliable.



Sewn Tinsel Leads

The connection between the voice coil and the terminal block is critical, since all the power sent to the speaker gets transferred through these connections. The new PXW subwoofer feature massively oversized braided tinsel leads for excellent power transfer.

To ensure silent and reliable operation, the tinsel leads have been sewn to the spider at the bottom of each roll. This allows the tinsel lead to flex independently of the spider, preventing changes in driver compliance at different volume levels. This feature also allows the tinsel leads to operate completely silently.

Linear Roll Poly-Cotton Spiders

Linear spiders offer extremely linear cone motion control. This means that the new Clarion PXW subwoofers will sound good while operating at low levels and remain controlled and dynamic when being pushed to high excursions.

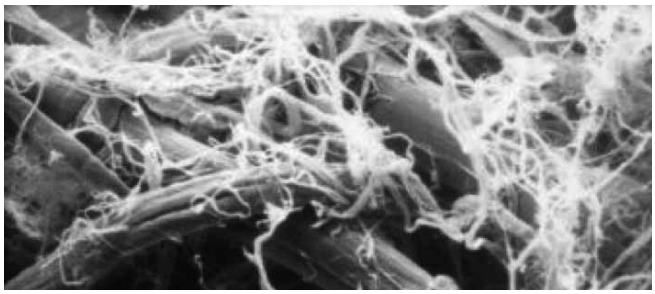
Subwoofers – Technologies

Dual Heat Resistant Voice Coils
All PXW subwoofers are available as Dual Voice Coil designs. You have your choice of dual 2 Ohm or dual 4 Ohm for 1, 2, 4 or 8 Ohm Impedances. This ensures that Clarion PXW subwoofers will work perfectly achieve the maximum power potential when connected to any amp on the market.

You can tell which driver you are ordering by the last number in the model. The PXW1x51 are dual 2 Ohm drivers and PXW1x52 are dual 4 Ohm driver. If you parallel the voice coils, you get the number at the end of the model number.

PXW1051	Dual 2 Ohm	1 or 4 Ohms
PXW1052	Dual 4 Ohm	2 or 8 Ohms
PXW1251	Dual 2 Ohm	1 or 4 Ohms
PXW1252	Dual 4 Ohm	2 or 8 Ohms
PXW1552	Dual 4 Ohm	2 or 8 Ohms

Kevlar / Paper Composite Cone Design



The balance between strength and mass in a woofer cone is of the utmost importance to the performance of any audio transducer. The cone of the PXW subwoofers is a composite of pulp paper and Kelvar Fibres.

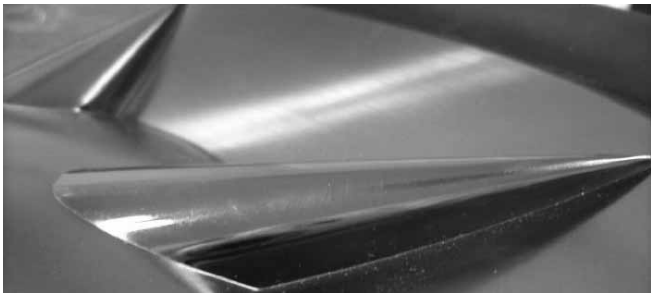
Paper cones have excellent strength to mass properties, but can soften slightly in high humidity environments. To rectify this, Clarion mixes Kevlar fibers into the pulp paper mixture. These fibers produce a much stronger cone that offers better resistance to changing environment conditions.

Co-Polymer Composite High Excursion Surround
The surround at the outer edge of the cone serves three important duties - it provides compliance to the cone assembly, it damps the cone assembly, and it allows the speaker cone to travel through its range of motion while maintaining an airtight seal.

The new Clarion PXW subwoofers feature a synthetic rubber surround that provides the flexibility of foam while offering the reliability and longevity of rubber.

The shape of the surround allows the cone to travel through its range of motion unimpaired.

Polypropylene Electrolytic Spun Aluminum Coated Dust Cap



The dust cap on the new PXW subwoofers contain engineering than meets the eye. The shape of the dust cap, with this five reinforcing spokes, adds significant strength to the design. Each spoke triangulates the center of the cone, ensuring it does not flex during motion.

The dust cap covers the entire face of the subwoofer to add strength to the Kevlar/Paper reinforced cone beneath. The dust cap triangulates the outer edge of the cone below, further strengthening the assembly.

The dust cap features an electrolytically applied spun aluminum finish.

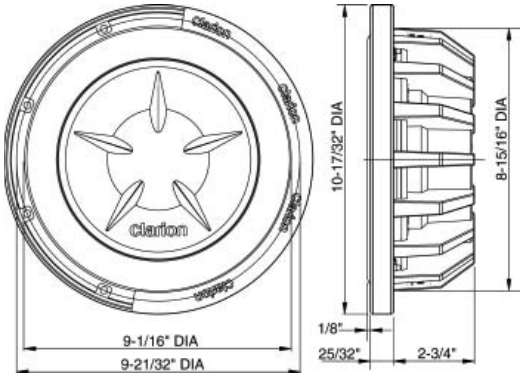
Hidden Screw Mounting Gasket
The new PXW subwoofers feature a custom tooled rubber mounting gasket. This gasket ensures an perfectly airtight seal against the face of an enclosure, and conceals the mounting hardware for a clean, attractive installation.

PFW subwoofer

Clarion proudly introduces our first generation of shallow mount subwoofers - the PFW1051.

This subwoofer was designed to offer the best possible performance from a driver that requires only three inches of mounting depth.

Clarion chose not to add additional expense to the PFW subwoofer by implementing overly exotic material applications or complex suspension designs - instead we simply took everything that makes the PXW subwoofer great, and compressed it into a shorter package. Reliable, easy to install and great performance - the new PFW1051.



Single Voice Coil

Unlike the PXW subwoofers, the PFW1051 is available only in a single 4 Ohm voice coil configuration with a 300W continuous, 600W Maximum power handling rating.

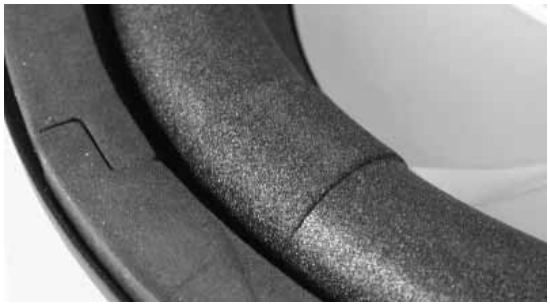
Small Enclosure Requirements

Building a subwoofer that looks impressive is one thing, but ensuring it will perform in the kind of applications people want is equally, if not more important. The new PFW subwoofer will sound excellent in sealed enclosures as small as 0.35 cubic feet and the optimum sealed enclosure is only 0.45 cubic feet. The PFW1051 also works great in vented enclosures, the optimum volume being 0.95 cubic feet for excellent low frequency extension and power handling.

SRW subwoofers

The second generation of SRW subwoofers features new levels of performance, design and reliability.

The cone is a two-part assembly. The top surface is custom-tooled injection molded polypropylene that is bonded to a pressed paper cone. The cone assembly is rigid, yet low in mass for excellent transient response and low distortion. The drivers uses a pair of linear spiders to maintain control at high excursion levels.



Cosmetic Design

Building a woofer that sounds good is one thing, but todays demanding autosound enthusiasts want their woofers to look good at the same time. The new SRW subwoofers were designed with this in mind. The five-spoke design of the woofer

cone is integrated into the custom-tooled foam rubber surround, and right down to the magnet protecting rubber boot - seamless and effective.

The five 'spokes' embossed into the cone extend to the edge of the driver via a custom tooled foam rubber surround. This surround offers excellent damping and flexibility characteristics for great sonic performance.

Rear-Vented Pole Piece
To prevent pressure from building up inside the center cap and causing distortion and nonlinearities, a vent is provided on the rear of the pole piece. This results in smooth cone movement, which contributes to the smooth, powerful bass response.

This vent also allows hot air to exit from the inside of the voice coil and motor assembly. Heat is the enemy of every speaker. Improved cooling means that your subwoofer will play louder, longer.

S.E.T. - Spider Exhaust Technology

Adding to the arsenal of keeping things cool is Spider Exhaust Technology. Five sets of cooling vents, located on the basket between the magnet and the spider provide a path for hot air to escape from the voice coil. These vents also release pressure from behind the spider, helping to improve performance and reduce distorion.

Chrome-Plated Terminals
The speaker terminals are chrome-plated push-on types with minimal contact resistance and high current transmission efficiency.

Aluminum Voice Coil Former
Helping to dissipate heat and increase speaker longevity is an aluminum voice coil former. Aluminum has excellent thermal conductivity properties, which helps to wick heat away from the copper voice coil windings.

Powerful Strontium Magnet
A high conductivity double-stacked magnet is used in the SRW subwoofers to obtain an air-gap magnetic flux density that is higher than conventional ferrite magnets. Combining this magnet with the heat-resistant voice coil results in subwoofers that are able to deliver high SPLs at large inputs with improved damping.

Dual Spider Design

Keeping the cone under control during high excursion levels is no easy task. The SRW subwoofers have two independent spiders to provide linear cone motion and excellent performance.

SW Subwoofers

Providing performance at an unbeatable price are the SW10X and SW12X subwoofers from Clarion. These subwoofers feature many of the same technologies as the SRW and PXW subwoofers, including SET (Spider Exhaust Technology) cooling, vented pole piece, Polypropylene dust cap, Strontium Ferrite Magnets, Chrome Plated Spring Terminals and a high temperature voice coil former.

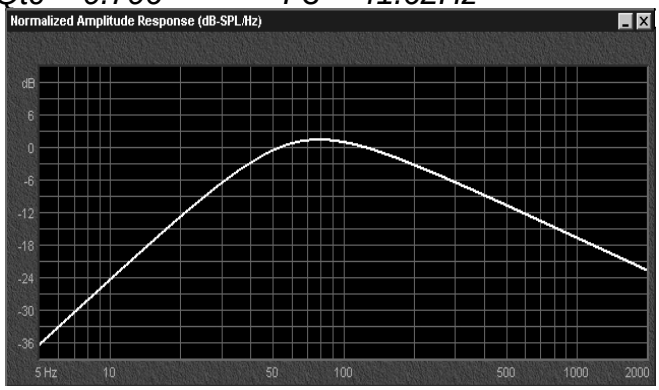
Subwoofers – SSW1000 Information

- Composite Cone Design
- Powder Coated Damped Aluminum Basket
- Butyl Rubber Surround
- High-Performance Polycotton Spider
- 4-Layer CCAW Voice Coil
- 3” Black Anodized aluminum voice coil bobbin
- Dual 4-Ohm Voice Coils
- Dual Strontium Ferrite Magnets (85.5 Oz each)
- Oversized tinsel leads
- Gold-Plated Push Type Terminals
- S.E.T. (Spider Exhaust Technology) cooling
- Chrome Plated, Bumped and Vented T-Yoke
- Injection-moulded rubber mounting gasket
- ICustom Tooled Magnet Boot

Maximum Power Handling 1600W
Continuous Power . . . . . .800 W
Frequency Response . . . . . 17 Hz to 800 Hz
Woofer Cone Material. . . . . Glass Fiber with PMI foam core
Woofer Magnet . . . . . Strontium Ferrite
Woofer Basket . . . . . Cast Aluminum
Woofer Surround . . . . . Butyl Rubber

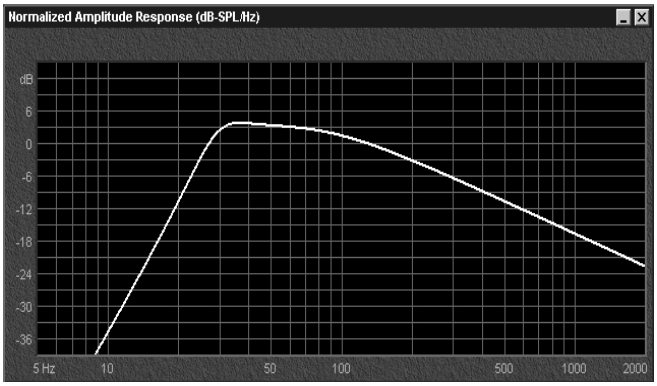
Sealed

Enclosure Airspace = 0.45 ft^3 net
Qtc = 0.706 F3 = 41.62Hz



Vented

Enclosure Airspace = 1.1 ft^3 net
Vent = 3” diam. x 17.81” long
Fb = 30Hz F3 = 24.64 Hz



Model: SSW1000

Thiele Small Parameters

Outside Diameter	**10"**
Mounting Hole	**228mm**
Mounting Depth	**175mm**
Magnet Weight	**4.85 kg**
Max. Peak Music	**1600 W**
Continuous Power	**800 W**
Nominal Impedance	**4+4 Ohm**
Re	**1.92 Ohms (Parallel)**
Le	**2.085 mH**
V.C. Diameter	**76.2 mm**
Sd	**0.0314m2**
Vas	**16.863 Liters**
Fs	**31.588 Hz**
Qts	**0.580 (Parallel)**
Qes	**0.645 (Parallel)**
Qms	**5.805**
Mms	**206.796g**
Bl	**11.34 Tm (Parallel)**
2.8V SPL	**87.16 dB**
Xmax	**25.4 mm**
Vd	**1.9 Liters**
No	**0.082%**

Subwoofers – SSW1200 Information

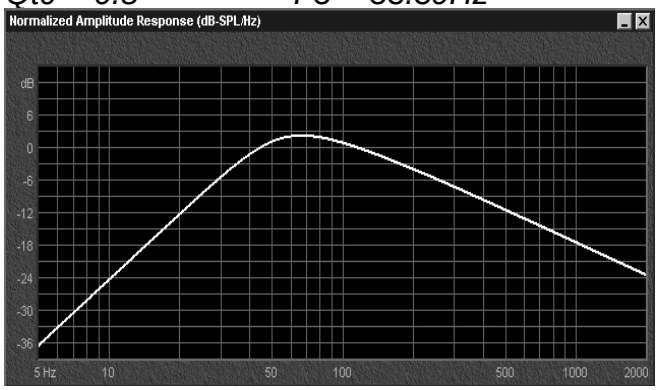
Model: SSW1200

- Composite Cone Design
- Powder Coated Damped Aluminum Basket
- Butyl Rubber Surround
- High-Performance Polycotton Spider
- 4-Layer CCAW Voice Coil
- 3” Black Anodized aluminum voice coil bobbin
- Dual 4-Ohm Voice Coils
- Dual Strontium Ferrite Magnets (85.5 Oz each)
- Oversized tinsel leads
- Gold-Plated Push Type Terminals
- S.E.T. (Spider Exhaust Technology) cooling
- Chrome Plated, Bumped and Vented T-Yoke
- Injection-moulded rubber mounting gasket
- ICustom Tooled Magnet Boot

Maximum Power Handling 2000W
Continuous Power . . . . . .1000 W
Frequency Response . . . . . 15 Hz to 800 Hz
Woofer Cone Material. . . . . Glass Fiber with PMI foam core
Woofer Magnet . . . . . Strontium Ferrite
Woofer Basket . . . . . Cast Aluminum
Woofer Surround . . . . . Butyl Rubber

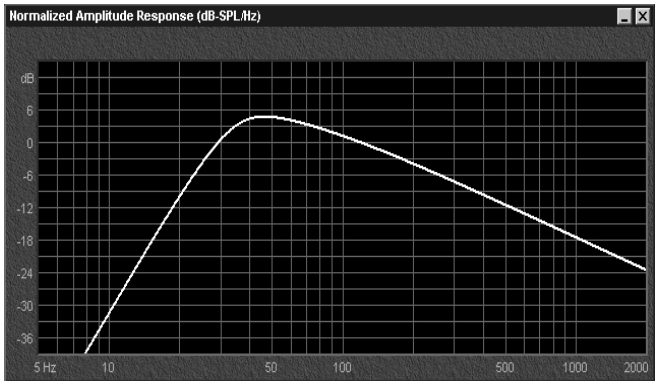
Sealed

Enclosure Airspace = 0.884 ft^3 net
Qtc = 0.8 F3 = 33.39Hz



Vented

Enclosure Airspace = 1.25 ft^3 net
Vent = 3” diam. x 15.32” long
Fb = 30Hz F3 = 25.96 Hz



Thiele Small Parameters

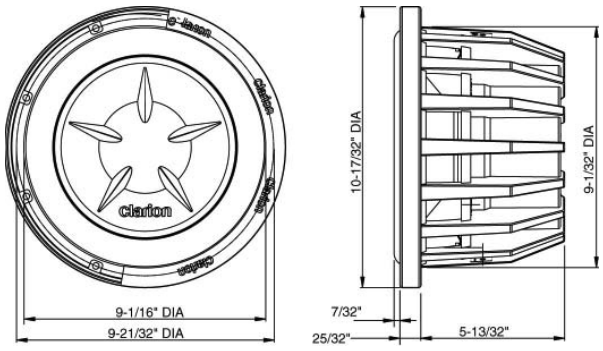
Outside Diameter	**12"**
Mounting Hole	**278mm**
Mounting Depth	**194mm**
Magnet Weight	**4.85 kg**
Max. Peak Music	**2000 W**
Continuous Power	**1000 W**
Nominal Impedance	**4+4 Ohm**
Re	**2.008 Ohms (Parallel)**
Le	**2.408 mH**
V.C. Diameter	**76.2 mm**
Sd	**0.0475m2**
Vas	**56.52 Liters**
Fs	**24.168 Hz**
Qts	**0.559 (Parallel)**
Qes	**0.624 (Parallel)**
Qms	**5.346**
Mms	**249.179 g**
Bl	**12.79 Tm (Parallel)**
No	**0.124&**
2.8V SPL	**88.837 dB**
Xmax	**25.4 mm**
Vd	**2.6 Liters**

Subwoofers – PXW1051/1052 Information

PXW1051 / PXW1052 Features

- Black Powder Coat Die Cast Aluminum Basket
- Polypropylene Electrolytic Spun Aluminum Coated Dust Cap
- Kevlar / Paper Composite Cone
- Co-Polymer Composite high-excursion surround
- Dual Strontium Ferrite Magnets
- Hyper Extended Pole Piece Assembly
- Dual Voice Coils
- Custom Tooled Gold Plated terminal blocks
- S.E.T. (Spider Exhaust Technology) cooling / venting
- Mesh Covered Vented Pole Piece
- Reversable hidden Screw mounting gasket
- 1,000-Watt Maximum Music Power
- 500-Watt Continuous Power Handling

Dimensions



PXW1051 T-S Parameters

Fs (Hz)	30.86
Qms	6.474
VAS (Litres)	32.95
VAS (Cubic Feet)	1.164
MMs (Grams)	126.9
Xmax (mm)	12
Xmax (inches)	0.472
Sd (m2)	0.0333
Qes (Series / Parallel)	0.509 / 0.556
Re (Serial / Parallel)	6.474 / 3.865
Le (Series / Parallel)	4.93 / 1.225
Z (Series / Parallel)	7.768 / 4.638
Bl (Series / Parallel)	13.68 / 16.93
Qts (Series / Parallel)	0.472 / 0.512
dB SPL (1W/1M)	84.8
Power (RMS / MAX)	500 / 1000
Vd (Cubic Feet)	0.12
Outside Diameter	10-9/16"
Mounting Hole	9-1/8"
Mounting Depth	5-5/16"
Total Height	6-3/16"
Total Weight	14.8 lbs

PXW1052 T-S Parameters

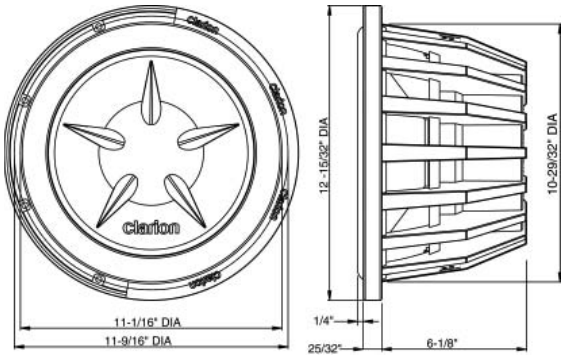
Fs (Hz)	33.56
Qms	6.206
VAS (Litres)	30.17
VAS (Cubic Feet)	1.065
MMS (Grams)	117.2
Xmax (mm)	12
Xmax (inches)	0.472
Sd (m2)	0.0333
Qes (Series / Parallel)	0.55 / 0.612
Re (Serial / Parallel)	6.926 / 1.909
Le (Series / Parallel)	7.872 / 1.961
Z (Series / Parallel)	7.311 / 2.291
Bl (Series / Parallel)	17.64 / 8.778
Qts (Series / Parallel)	0.505 / 0.557
dB SPL (1W/1M)	85.16
Power (RMS / MAX)	500 / 1000
Vd (Cubic Feet)	0.12
Outside Diameter	10-9/16"
Mounting Hole	9-1/8"
Mounting Depth	5-5/16"
Total Height	6-3/16"
Total Weight	14.8 lbs

Subwoofers – PXW1251/1252 Information

PXW1251 / PXW1252 Features

- Black Powder Coat Die Cast Aluminum Basket
- Polypropylene Electrolytic Spun Aluminum Coated Dust Cap
- Kevlar / Paper Composite Cone
- Co-Polymer Composite high-excursion surround
- Dual Strontium Ferrite Magnets
- Hyper Extended Pole Piece Assembly
- Dual Voice Coils
- Custom Tooled Gold Plated terminal blocks
- S.E.T. (Spider Exhaust Technology) cooling / venting
- Mesh Covered Vented Pole Piece
- Reversable hidden Screw mounting gasket
- 1,000-Watt Maximum Music Power
- 500-Watt Continuous Power Handling

Dimensions



PXW1251 T-S Parameters

Fs (Hz)	30.76
Qms	6.759
VAS (Litres)	67.73
VAS (Cubic Feet)	2.392
MMs (Grams)	142.6
Xmax (mm)	12
Xmax (inches)	0.472
Sd (m2)	0.0333
Qes (Series / Parallel)	0.593 / 0.692
Re (Serial / Parallel)	3.832 / 1.116
Le (Series / Parallel)	4.843 / 1.2
Z (Series / Parallel)	4.598 / 1.339
Bl (Series / Parallel)	13.34 / 6.666
Qts (Series / Parallel)	0.545 / 0.628
dB SPL (1W/1M)	87.2
Power (RMS / MAX)	500 / 1000
Vd (Cubic Feet)	0.15
Outside Diameter	12-7/16"
Mounting Hole	11-0"
Mounting Depth	6-1/8"
Total Height	7-0"
Total Weight	16.5 lbs

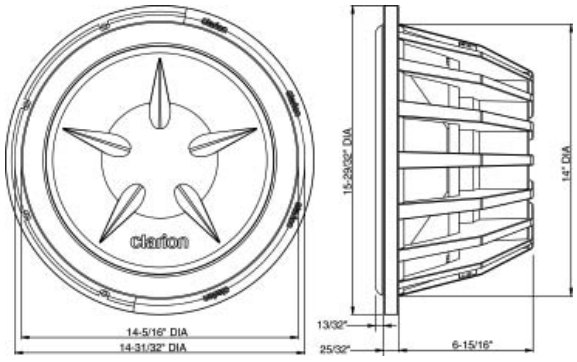
PXW1252 T-S Parameters

Fs (Hz)	34.27
Qms	7.15
VAS (Litres)	62.76
VAS (Cubic Feet)	2.216
MMs (Grams)	117.2
Xmax (mm)	12
Xmax (inches)	0.472
Sd (m2)	0.0504
Qes (Series / Parallel)	0.62 / 0.726
Re (Serial / Parallel)	7.192 / 1.978
Le (Series / Parallel)	7.206 / 1.786
Z (Series / Parallel)	8.63 / 2.374
Bl (Series / Parallel)	17.59 / 8.53
Qts (Series / Parallel)	0.571 / 0.659
dB SPL (1W/1M)	88.08
Power (RMS / MAX)	500 / 1000
Vd (Cubic Feet)	0.15
Outside Diameter	12-7/16"
Mounting Hole	11-0"
Mounting Depth	6-1/8"
Total Height	7-0"
Total Weight	16.5 lbs

PXW1552 Features

- Black Powder Coat Die Cast Aluminum Basket
- Polypropylene Electrolytic Spun Aluminum Coated Dust Cap
- Kevlar / Paper Composite Cone
- Co-Polymer Composite high-excursion surround
- Dual Strontium Ferrite Magnets
- Hyper Extended Pole Piece Assembly
- Dual 4-Ohm Voice Coils
- Custom Tooled Gold Plated terminal blocks
- S.E.T. (Spider Exhaust Technology) cooling / venting
- Mesh Covered Vented Pole Piece
- Reversable hidden Screw mounting gasket
- 1,500-Watt Maximum Music Power
- 750-Watt Continuous Power Handling

Dimensions



PXW1552 T-S Parameters

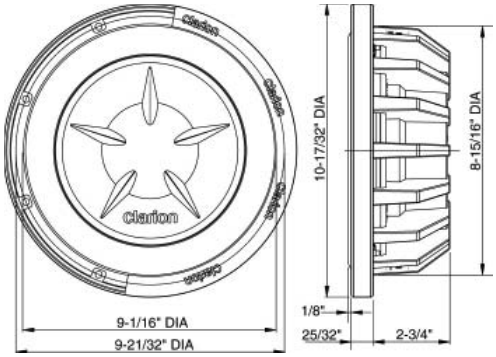
Fs (Hz)	**23.28**
Qms	**5.927**
VAS (Litres)	**193.1**
VAS (Cubic Feet)	**6.818**
MMs (Grams)	**269.2**
Xmax (mm)	**12.5**
Xmax (inches)	**0.492**
Sd (m2)	**0.885**
Qes (Series / Parallel)	**0.532 / 0.602**
Re (Serial / Parallel)	**7.092 / 1.954**
Le (Series / Parallel)	**9.216 / 2.267**
Z (Series / Parallel)	**8.51 / 2.345**
Bl (Series / Parallel)	**22.9 / 11.31**
Qts (Series / Parallel)	**0.488 / 0.546**
dB SPL (1W/1M)	**88.6**
Power (RMS / MAX)	**750 / 1,500**
Vd (Cubic Feet)	**0.21**
Outside Diameter	**15-15/16"**
Mounting Hole	**14-1/4"**
Mounting Depth	**7"**
Total Height	**7-13/16"**
Total Weight	**23.55 lbs**

Subwoofers – PFW1051 Information

PFW1051 Features

- Black Powder Coat Die Cast Aluminum Basket
- Less than 3" mounting depth
- Polypropylene Electrolytic Spun Aluminum Coated Dust Cap
- Kevlar / Paper Composite Cone
- Co-Polymer Composite high-excursion surround
- Strontium Ferrite Magnets
- Extended Pole Piece Assembly
- Singlel 4-Ohm Voice Coils
- Custom Tooled Gold Plated terminal blocks
- S.E.T. (Spider Exhaust Technology) cooling / venting
- Mesh Covered Vented Pole Piece
- Reversable hidden Screw mounting gasket
- 600-Watt Maximum Music Power
- 300-Watt Continuous Power Handling

Dimensions



PFW1051 T-S Parameters

Fs (Hz)	**41.29**
Qms	**6.569**
VAS (Litres)	**27.21**
VAS (Cubic Feet)	**0.961**
MMs (Grams)	**84.76**
Xmax (mm)	**5.5**
Xmax (inches)	**0.217**
Sd (m2)	**0.0331**
Qes	**0.541**
Re	**3.302**
Le	**2.921**
Z	**3.962**
Bl	**11.59**
Qts	**0.5**
dB SPL (1W/1M)	**87.48**
Power (RMS / MAX)	**300 / 600**
Vd (Cubic Feet)	**0.045**
Outside Diameter	**10-9/16"**
Mounting Hole	**9-1/8"**
Mounting Depth	**2-3/4"**
Total Height	**3-5/8"**
Total Weight	**9.8 lbs**

Subwoofers – SRW1045 Information

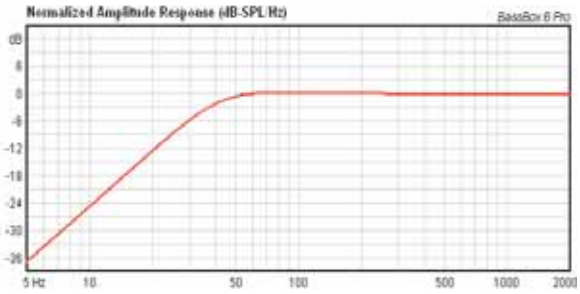
Model: SRW1045

- Polypropylene Cone
- Foam Surround
- 4 Ohm Heat Resistant Voice Coil
- Rear Vented Pole Piece
- Large Strontium Ferrite Magnet
- Rubber Magnet Cover
- For Small Sealed or Small Vented Design

Maximum Power Handling	650W
Continuous Power Handling	325W
SPL	81 dB/M
Frequency Response	32Hz - 500Hz
Woofer Cone Material	Paper & Kevlar
Woofer Magnet	Dual Ferrite
Woofer Basket	Stamped Steel
Woofer Surround	Foam Rubber

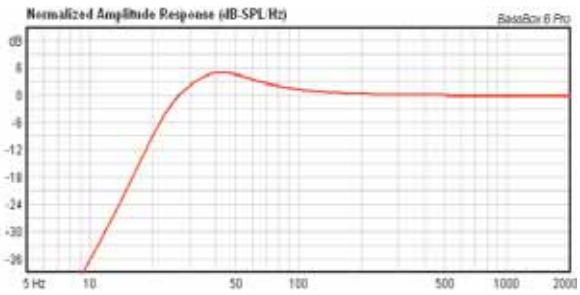
Sealed/Acoustic Suspension

OPTIMUM
Enclosure Airspace (Unfilled) = 0.88 Cubic Feet
Enclosure Airspace (Filled) = 1.41 Cubic Feet



Vented/Bass Reflex

HIGH OUTPUT
Enclosure Airspace (Unfilled) = 2.36 Cubic Feet
Port Size = 3″ ID x 5.9″ Long
Fb = 29.94 Hz
Fc = 23.64 Hz



Thiele Small Parameters

Outside Dia	264 mm
Mounting Hole	228 mm
Mounting Depth	148 mm
Sensitivity	81 dB/m
Max. Peak Music	650 w
Continuous Power	325 w
Nominal Impedance	4 ohm
Re DC Imp (± 10%)	3 ohm
Le	1.4 mH
V.C. Diameter	38.9 mm
V.C. Length	22.6 mm
Air Gap	8.0 mm
Piston Diameter	195 mm
Sd	298 cm^2
Vas	36.4 L
Fs	31.2 Hz
Qts	0.77
Qes	0.86
Mms	90.4 g
Rms	2.56
Bl	8.8
Speaker Displacement	2.9 L
Xmax	9.8 mm
Magnet Weight	35.40 oz

Subwoofers – SRW1085 Information

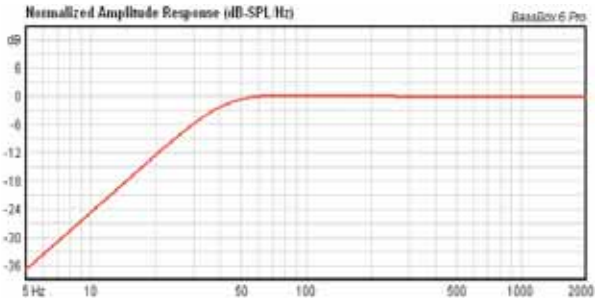
Model: SRW1085

- Polypropylene Cone
- Foam Surround
- Dual 4 Ohm Heat Resistant Voice Coil
- Rear Vented Pole Piece
- Large Strontium Ferrite Magnet
- Rubber Magnet Cover
- For Small Sealed or Small Vented Design

Maximum Power Handling (Coils in Series)	650W
Continuous Power Handling (Coils in Series)	325 W
SPL (Coils in Series)	81 dB/M
Frequency Response	32Hz - 500Hz
Woofer Cone Material	Paper & Kevlar
Woofer Magnet	Dual Ferrite
Woofer Basket	Stamped Steel
Woofer Surround	Foam Rubber

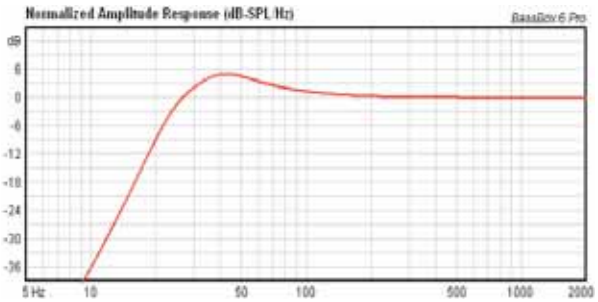
Sealed/Acoustic Suspension

Optimum
Enclosure Airspace (Unfilled) = 0.74 Cubic Feet
Enclosure Airspace (filled) = 0.98 (Cubic Feet)
Fc = 38.3 Hz



Vented/Bass Reflex

High Output
Enclosure Airspace (Unfilled) = 2.63 Cubic Feet
Port Size = 3 Inch ID x 5 Inches long
Fb = 30.26 Hz
F3 = 23.71 Hz



Thiele Small Parameters

Outside Dia	264 mm
Mounting Hole	228 mm
Mounting Depth	148 mm
Sensitivity	81 dB/m
Max. Peak Music	650 w
Continuous Power	325 w
Nominal Impedance	4+4Ohm
Re DC Imp (± 10%)	3+3 Ohm
Le	1.4 mH
V.C. Diameter	38.9 mm
V.C. Length	26.7 mm
Air Gap	8.0 mm
Piston Diameter	195 mm
Sd	298 cm^2
Vas	40.2 L
Fs	31.1 Hz
Qts	0.79
Qes	0.88
Mms	99.0 g
Rms	2.38
Bl	11.5
Speaker Displacement	2.9 L
Xmax	9.4 mm
Magnet Weight	35.40 oz

Subwoofers – SRW1245 Information

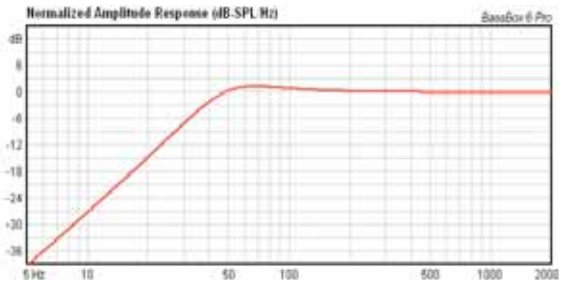
Model: SRW1245

- Polypropylene Cone
- Foam Surround
- 4 Ohm Heat Resistant Voice Coil
- Rear Vented Pole Piece
- Large Strontium Ferrite Magnet
- Rubber Magnet Cover
- For Small Sealed or Small Vented Design

Maximum Power Handling	750W
Continuous Power Handling	350W
SPL	82 dB/M
Frequency Response	30Hz - 500Hz
Woofer Cone Material	Paper & Kevlar
Woofer Magnet	Dual Ferrite
Woofer Basket	Stamped Steel
Woofer Surround	Foam Rubber

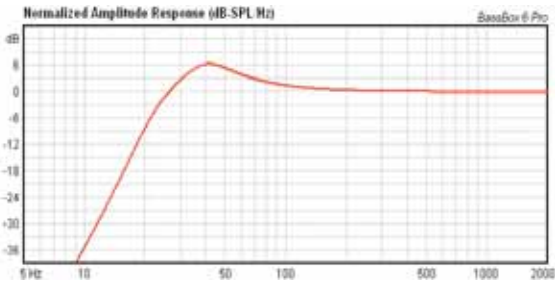
Sealed/Acoustic Suspension

OPTIMUM
Enclosure Airspace (Unfilled) = 1.08 Cubic Feet
Enclosure Airspace (Filled) = 1.17 Cubic Feet



Vented/Bass Reflex

HIGH OUTPUT
Enclosure Airspace (Unfilled) = 2.47 Cubic Feet
Port Size - 3″ ID x 20″ Long
Fb = 30.35 Hz
Fc = 23.49 Hz



Thiele Small Parameters

Outside Dia	314 mm
Mounting Hole	277 mm
Mounting Depth	160 mm
Sensitivity	82 dB/m
Max. Peak Music	750 w
Continuous Power	375 w
Nominal Impedance	4 ohm
Re DC Imp (± 10%)	3 ohm
Le	1.4 mH
V.C. Diameter	38.9 mm
V.C. Length	27.6 mm
Air Gap	8.0 mm
Piston Diameter	242 mm
Sd	459 cm^2
Vas	65.94 L
Fs	29.6 Hz
Qts	0.83
Qes	0.96
Mms	134.6 g
Rms	2.80
Bl	9.8
Speaker Displacement	2.9 L
Xmax	9.8 mm
Magnet Weight	44.80 oz

Subwoofers – SRW1285 Information

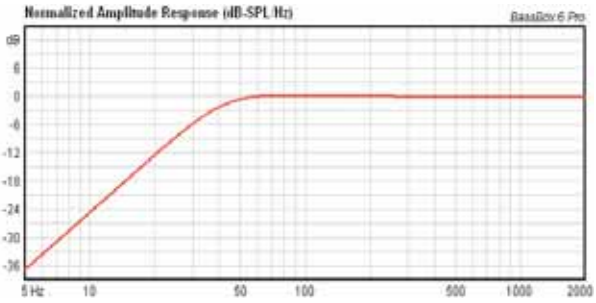
Model: SRW1085

- Polypropylene Cone
- Foam Surround
- Dual 4 Ohm Heat Resistant Voice Coil
- Rear Vented Pole Piece
- Large Strontium Ferrite Magnet
- Rubber Magnet Cover
- For Small Sealed or Small Vented Design

Maximum Power Handling (Coils in Series)	650W
Continuous Power Handling (Coils in Series)	325 W
SPL (Coils in Series)	81 dB/M
Frequency Response	32Hz - 500Hz
Woofer Cone Material	Paper & Kevl
Woofer Magnet	Dual Ferrite
Woofer Basket	Stamped Ste
Woofer Surround	Foam Rubbe

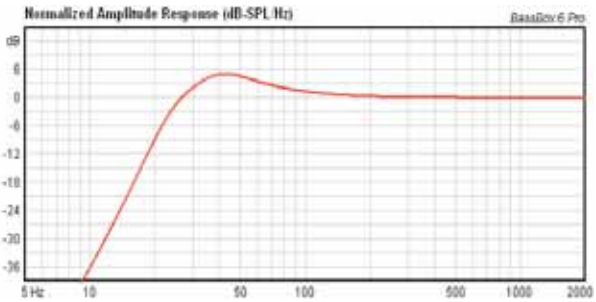
Sealed/Acoustic Suspension

Optimum
Enclosure Airspace (Unfilled) = 0.74 Cubic Feet
Enclosure Airspace (filled) = 0.98 (Cubic Feet)
Fc = 38.3 Hz



Vented/Bass Reflex

High Output
Enclosure Airspace (Unfilled) = 2.63 Cubic Feet
Port Size = 3 Inch ID x 5 Inches long
Fb = 30.26 Hz
F3 = 23.71 Hz

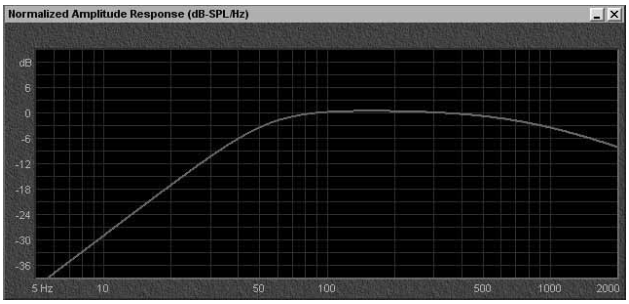


Thiele Small Parameters

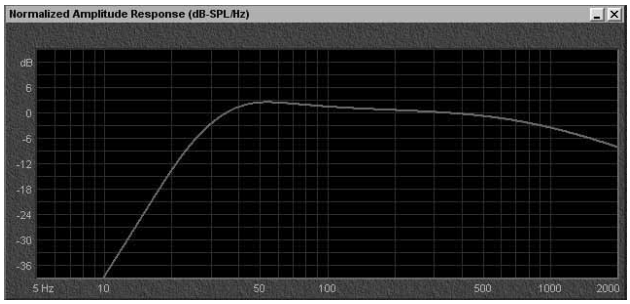
Outside Dia	264 mm
Mounting Hole	228 mm
Mounting Depth	148 mm
Sensitivity	81 dB/m
Max. Peak Music	650 w
Continuous Power	325 w
Nominal Impedance Re DC Imp (± 10%)	4+4Ohm 3+3 Ohm
Le	1.4 mH
V.C. Diameter	38.9 mm
V.C. Length	26.7 mm
Air Gap	8.0 mm
Piston Diameter	195 mm
Sd	298 cm^2
Vas	40.2 L
Fs	31.1 Hz
Qts	0.79
Qes	0.88
Mms	99.0 g
Rms	2.38
Bl	11.5
Speaker Displacement	2.9 L
Xmax	9.4 mm
Magnet Weight	35.40 oz

PXW1051/1052 Enclosure Designs

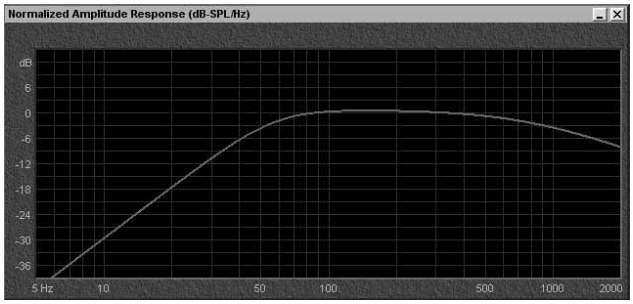
Sealed Enclosure - Street
Net Internal Air Volume: 0.5ft3
F3 Frequency: 52.12Hz
Total System Q: 0.719



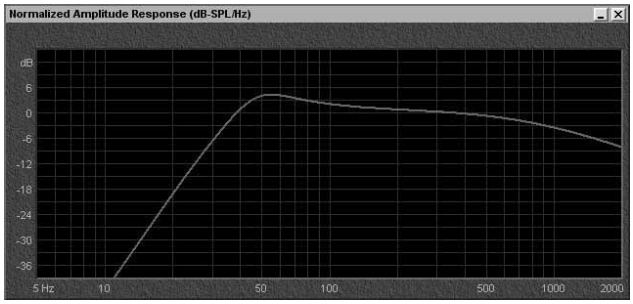
Vented Enclosure - Sound Quality
Net Internal Air Volume: 1.0
Vent Dimension: 2.5" ID x 11-1.8" long
F3 Frequency: 29.29 Hz



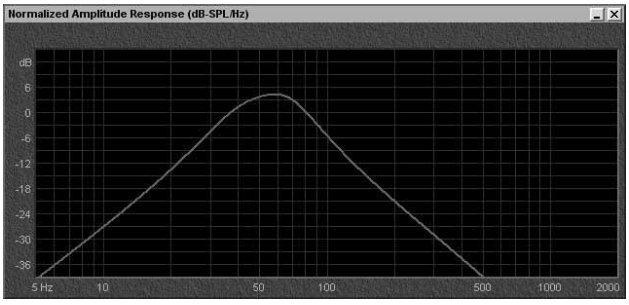
Sealed Enclosure - 2 x PXW1051/1052
Net Internal Air Volume: 0.9ft3
F3 Frequency: 52.64Hz
Total System Q: 0.741



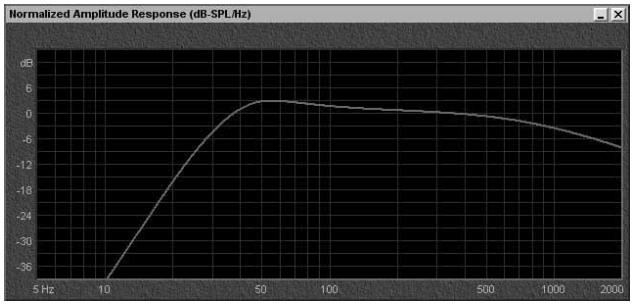
Vented Enclosure - Street
Net Internal Air Volume: 1.0 ft3
Vent Dimension: 3" ID x 9-3/8" long
F3 Frequency: 34.18 Hz



Bandpass Enclosure - SPL
Sealed Chamber Net Air Volume: 0.75 ft3
Vented Chamber Net Air Volume: 0.8 ft3
Vent Dimension: 4" ID x 10-1/2" long
F3 Frequency: 39.67 Hz

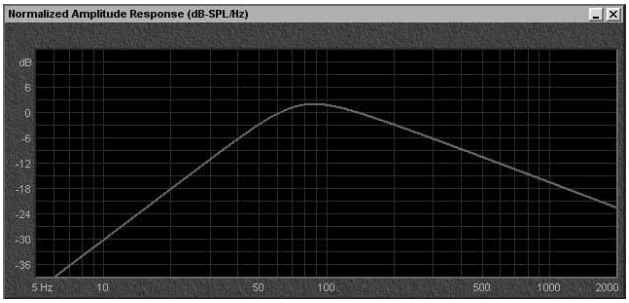


Vented Enclosure - 2 x PXW1051/1052 Vented Street
Net Internal Air Volume: 2.0 ft3
Vent Dimension: 4" ID x 10-3/8" long
F3 Frequency: 30.5 Hz

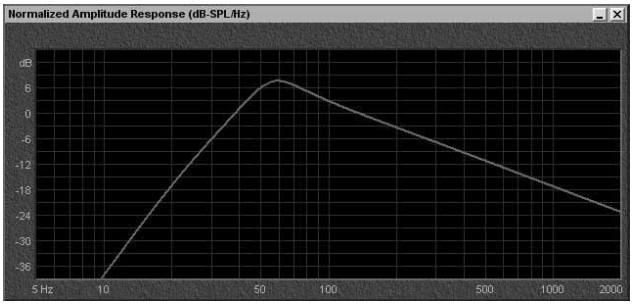


PXW1251/1252 Enclosure Designs

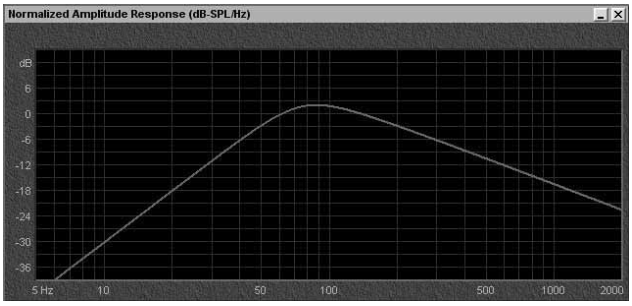
Sealed Enclosure - Sound Quality
Net Internal Air Volume: 0.83ft3
F3 Frequency: 49.15Hz
Total System Q: 0.899



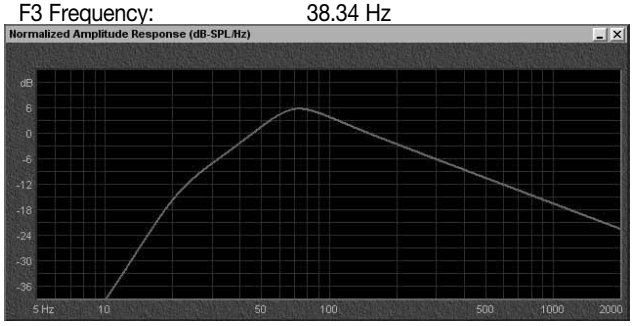
Vented Enclosure - SPL
Net Internal Air Volume: 2.0 ft3
Vent Dimension: 4" ID x 6-0" long
F3 Frequency: 33.84 Hz



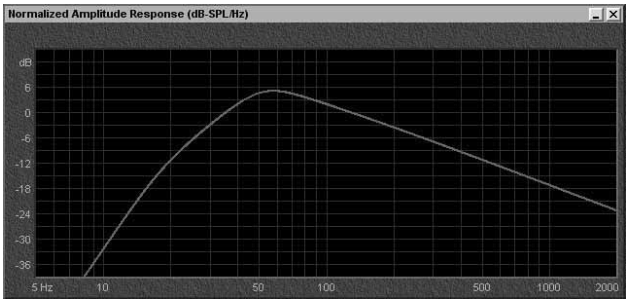
Sealed Enclosure - 2 x PXW1251/1252
Net Internal Air Volume: 1.6ft3
F3 Frequency: 549.61Hz
Total System Q: 0.904



Vented Enclosure - 2 x PXW1251/1252 - Street
Net Internal Air Volume: 3.5 ft3
Vent Dimension: 4" ID x 6-1/2" long
F3 Frequency: 38.34 Hz

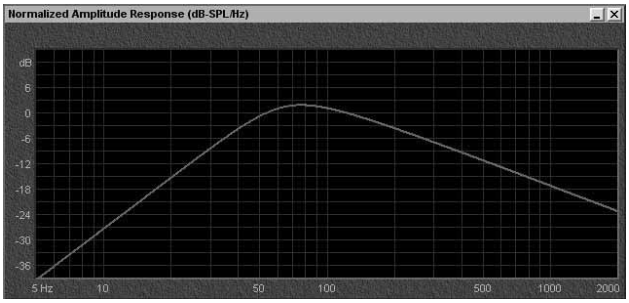


Vented Enclosure - Street
Net Internal Air Volume: 1.8ft3
Vent Dimension: 3" x 6-0"
F3 Frequency: 32.48Hz

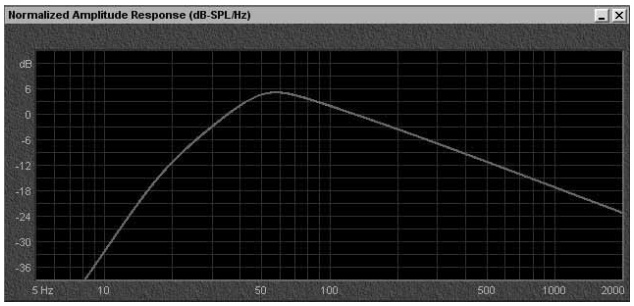


PXW1552 Enclosure Designs

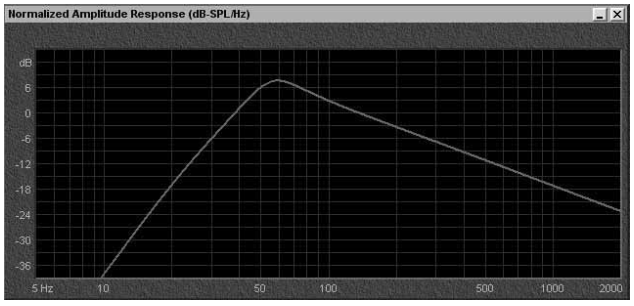
Sealed Enclosure - Sound Quality
Net Internal Air Volume: 0.5ft3
F3 Frequency: 52.12Hz
Total System Q: 0.719



Vented Enclosure - Street
Net Internal Air Volume: 3.5 ft3
Vent Dimension: 4" ID x 6-3/4" long
F3 Frequency: 29.73 Hz
Vented Enclosure - SPL

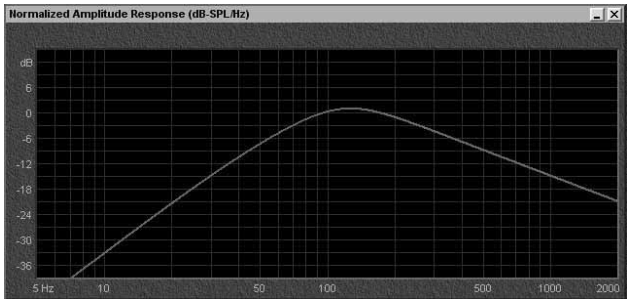


Net Internal Air Volume: 3.5 ft3
Vent Dimension: 2 x 4" ID x 6-5/8" long
F3 Frequency: 33.93 Hz

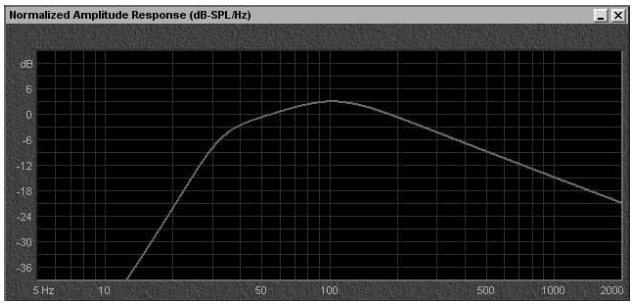


PFW1051 Enclosure Designs

Sealed Enclosure - Sound Quality
Net Internal Air Volume: 0.5ft3
F3 Frequency: 69.5z
Total System Q: 0.671



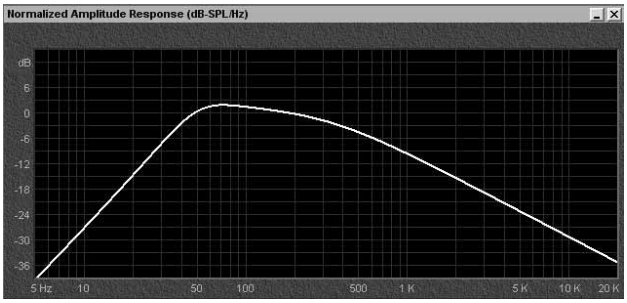
Vented Enclosure
Net Internal Air Volume: 1.0 ft3
Vent Dimension: 2.5" ID x 9-3/8"" long
F3 Frequency: 38.47 Hz



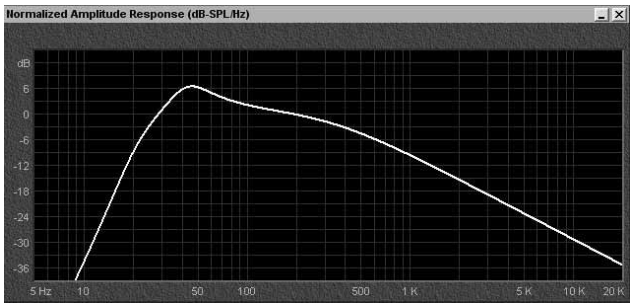
SRW1045 / SRW1085 Enclosures

SRW1045 Enclosure Designs

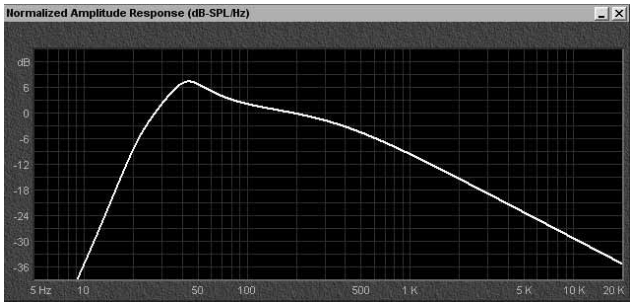
Sealed Enclosure - Sound Quality
Net Internal Air Volume: 0.5ft3
F3 Frequency: 38.47Hz
Total System Q: 1.0



Vented Enclosure - Street
Net Internal Air Volume: 1.5 ft3
Vent Dimension: 3" ID x 10.39" long
F3 Frequency: 24.89 Hz

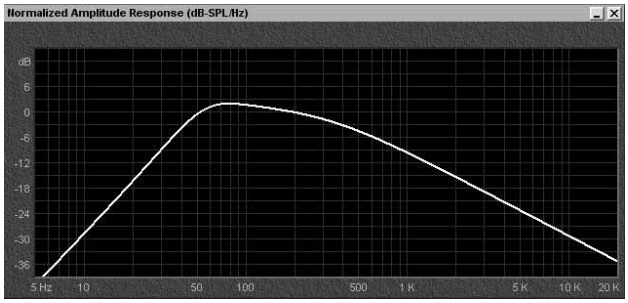


Dual Driver Vented Enclosure - Street
Net Internal Air Volume: 3.0 ft3
Vent Dimension: 4" ID x 7.9" long
F3 Frequency: 24.05 Hz

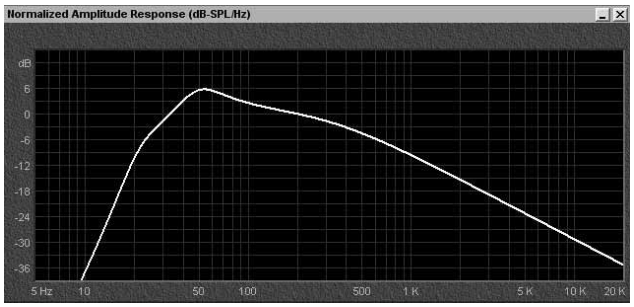


SRW1085 Enclosure Designs

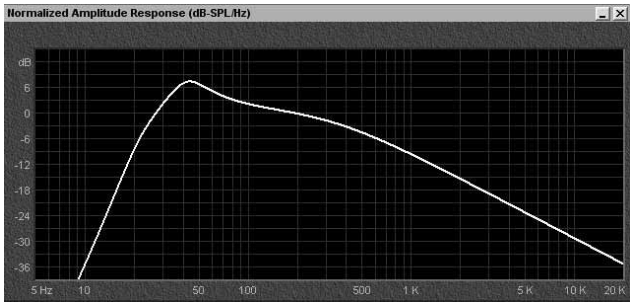
Sealed Enclosure - Sound Quality
Net Internal Air Volume: 0.65ft3
F3 Frequency: 41.91Hz
Total System Q: 1.0



Vented Enclosure
Net Internal Air Volume: 1.5 ft3
Vent Dimension: 3" ID x 10-7/8"" long
F3 Frequency: 27.47 Hz

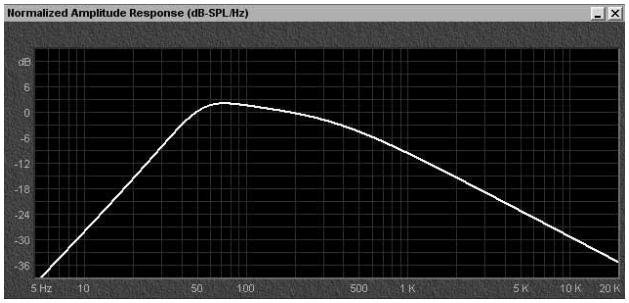


Dual Driver Vented Enclosure - Street
Net Internal Air Volume: 3.0 ft3
Vent Dimension: 4" ID x 6.157" long
F3 Frequency: 26.85 Hz

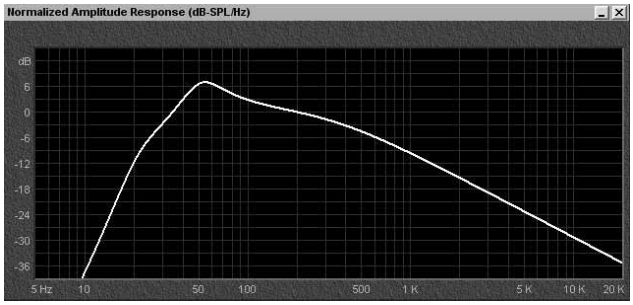


SRW1245 Enclosure Designs

Sealed Enclosure - Sound Quality
Net Internal Air Volume: 1.0 ft3
F3 Frequency: 39.77Hz
Total System Q: 1.05



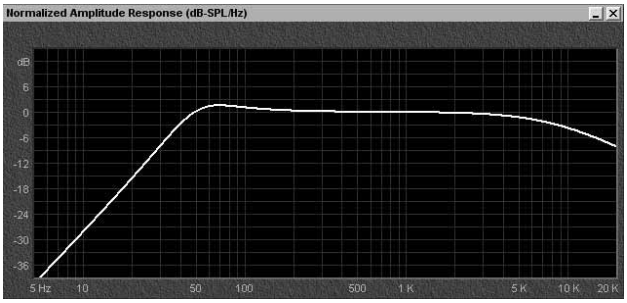
Vented Enclosure
Net Internal Air Volume: 2.0 ft3
Vent Dimension: 3" ID x 5" long
F3 Frequency: 29.48 Hz



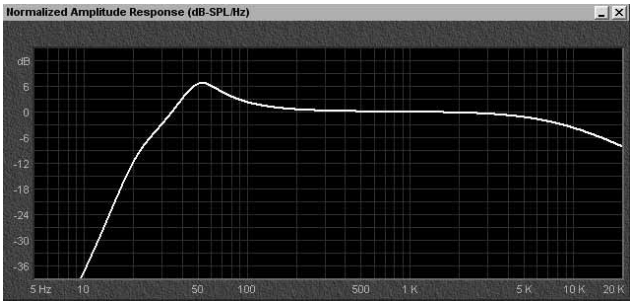
Dual Driver Vented Enclosure
Net Internal Air Volume: 3.5 ft3
Vent Dimension: 4" ID x 3.0" long
F3 Frequency: 29.48 Hz

SRW1285 Enclosure Designs

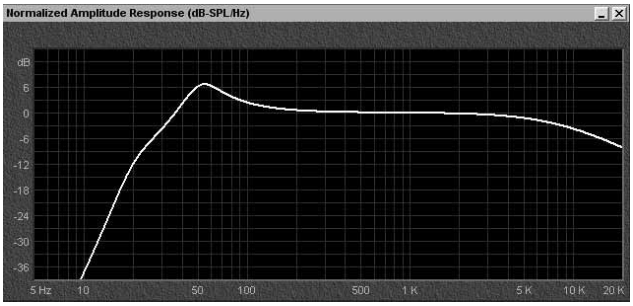
Sealed Enclosure - Sound Quality
Net Internal Air Volume: 1 ft3
F3 Frequency: 42.35Hz
Total System Q: 1.05



Vented Enclosure
Net Internal Air Volume: 2.0 ft3
Vent Dimension: 3" ID x 5" long
F3 Frequency: 29.7 Hz



Dual Driver Vented Enclosure
Net Internal Air Volume: 3.5 ft3
Vent Dimension: 4" ID x 4.25" long
F3 Frequency: 31.12 Hz



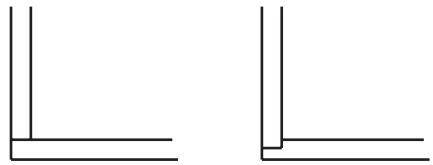
Subwoofer Enclosures

Clarion Pre-loaded subwoofer enclosures

Today's Car Audio specialist doesn't always have the time to design and construct the perfect subwoofer system, yet his or her customers demand the best possible performance for their dollar. Clarion comes to your rescue with a complete line of pre-loaded subwoofer enclosures - designed and manufactured in Canada to offer the best possible performance from your Clarion subwoofers.

Construction

Clarion Subwoofer enclosures are constructed from 3/4-inch MDF hardwood. This wood offers much higher density throughout the material as compared to some off-shore sourced products. The results in an enclosure that is well damped for tight, accurate, uncolored music reproduction.



Where two panels meet at right angles, Clarion subwoofer enclosures use Rabbet construction. This increases the surface area of the connection to offer more strength, and an improved seal.

Design

Each Clarion Subwoofer enclosure is designed specifically for the driver that is included with it. No compromises are made during the design - offering the best possible balance of output, extension and dynamic response. Generic subwoofer enclosures don't always offer this balance, reducing your customers enjoyment and satisfaction.

Cosmetics

Clarion Subwoofer enclosures don't just look good, they are designed to last. The enclosures are wrapped in tough black carpet for a clean look. The front panels of the enclosures feature polyethylene vinyl wrapping. This vinyl wrap not only adds style to the enclosure, but its tough surface resists scuffs and scratches commonly associated with painted enclosures. Clarion subwoofer enclosures also feature a silver Clarion gel badge and engraving to complete the package.

Flexibility

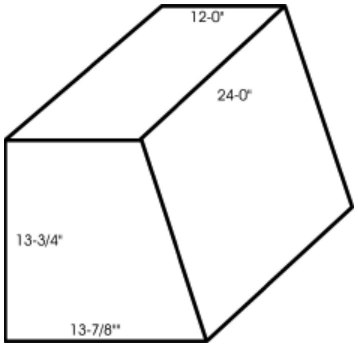
Clarion Subwoofer enclosures are offered in many combinations to maximize the performance of your audio system. Our single 10" and single 12" PXW series enclosures are offered in 4 Ohm or 2 Ohm designs. Match these enclosures to the amp for maximum output.

Ease of installation

Clarion subwoofer enclosure feature recessed five-way binding post terminals. This provides a protected electrical connection while allowing easy access should the enclosure need to be removed for any reason.

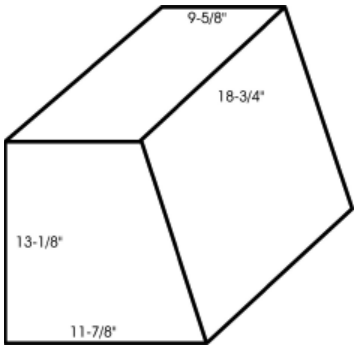
Subwoofer Enclosures - Dimensions

SRW Series Subwoofer Enclosures



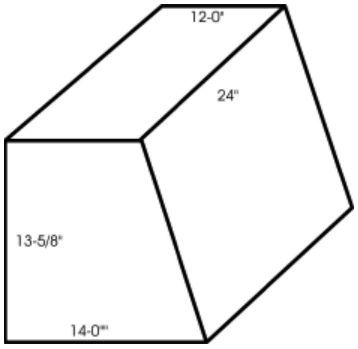
PRO1105P
Single SRW1045
4 Ohm subwoofer in a ported enclosure.

Net Load: 4 Ohms



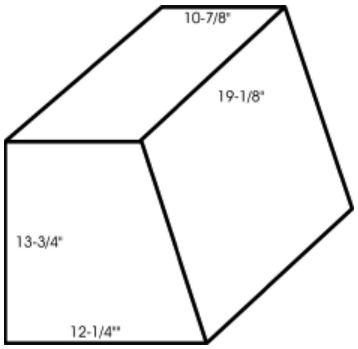
PRO1105S
Single SRW1045
4 Ohm subwoofer in a sealed enclosure.

Net Load: 4 Ohms



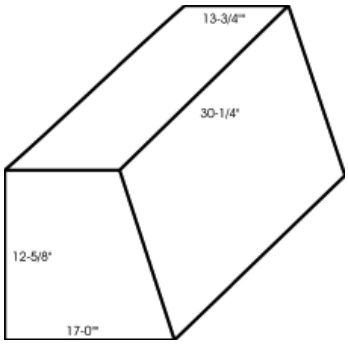
PR01125P
Single SRW1245
4 Ohm subwoofer in a ported enclosure.

Net Load: 4 Ohms



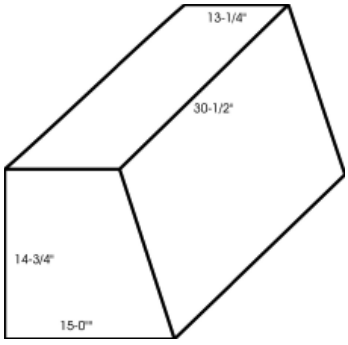
PRO1125S
Single SRW1245
4 Ohm subwoofer in a sealed enclosure.

Net Load: 4 Ohms



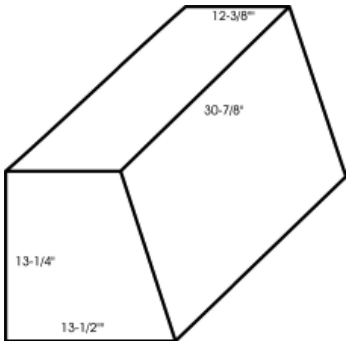
PRO2105S
Two SRW1085 2 Ohm subwoofers in a sealed enclosure.

Net Load: 4 Ohms



PRO2125S
Two SRW1285 2 Ohm subwoofers in a sealed enclosure.

Net load: 4 Ohms



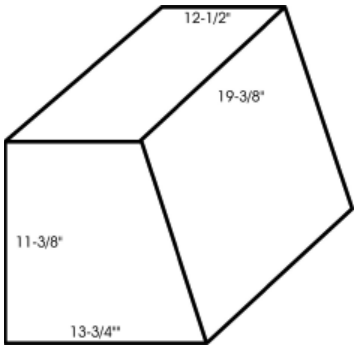
PRO1105PAX
Single SRW1045
4 Ohm subwoofer in a ported enclosure with an APX1300 amplifier.

PRO1105STRGM1
Single SRW1045 4 Ohm subwoofer in a sealed enclosure. Designed to fit 1993 - 1999 Extended Cab GM pickup trucks. Installs under flip-down rear bench seat.

PRO1105STRGM2
Single SRW1045 4 Ohm subwoofer in a sealed enclosure. Designed to fit 2000+ Extended Cab GM pickup trucks. Installs under flip-down rear bench seat.

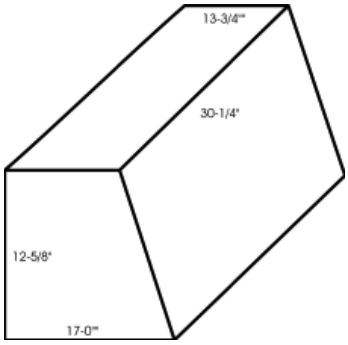
Subwoofer Enclosures - Dimensions

PXW/PFW Series Subwoofer Enclosures



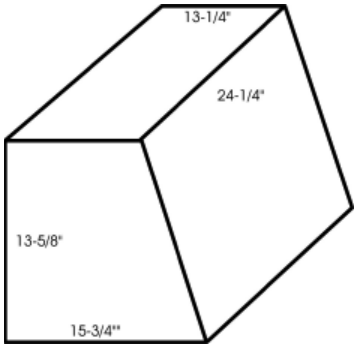
PX1105P4 - 4 Ohm
Single PXW1051
4 Ohm subwoofer in a ported enclosure.

PX1105P2 - 2 Ohm
Single PXW1052
2 Ohm subwoofer in a ported enclosure.



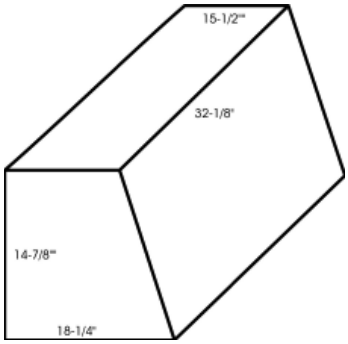
PX2105P
Two PXW1052
2 Ohm subwoofers in a ported enclosure.

Net Load:
4 Ohms



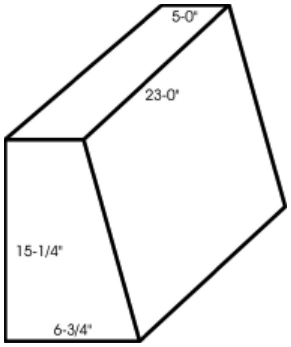
PX1125P4 - 4 Ohm
Single PXW1251
4 Ohm subwoofer in a ported enclosure.

PX1125P2 - 2 Ohm
Single PXW1252
2 Ohm subwoofer in a ported enclosure.



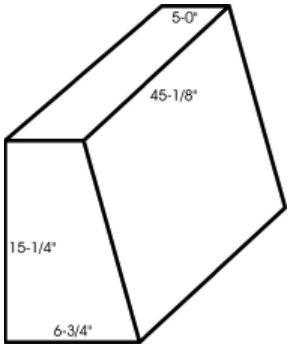
PX2125P
Two PXW1252
2 Ohm subwoofers in a ported enclosure.

Net Load:
4 Ohms



PX1105PTR4
Single PFW1051
4 Ohm subwoofer in a sealed enclosure.

Net Load: 4 Ohm



PX2105PTR2
Dual PFW1051
4 Ohm subwoofers in a sealed enclosure.

Net Load: 2 Ohm

SRV303
AMPLIFIED SUBWOOFER

FEATURES

- Built-In 120-Watt Amplifier
- 7" Counter-Drive Subwoofer
- Selectable Crossover at 50/75/100/120 Hz
- Adjustable Input Gain
- Selectable Phase
- RCA Line-Level Input
- Speaker-Level Input
- Detachable Control Panel With 16' Extension Cable Included
- Flexible Mounting Capability

SPECIFICATIONS

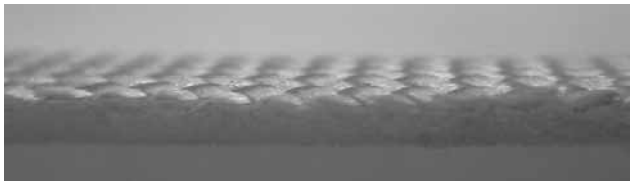
Continuous Power . . . . . 60 W
Maximum Power. . . . . ..120 W
Frequency Response . . . . . 55 to 120 Hz
Dimensions (h x w x l) . . . . . 2-7/8" x 13" x 9-1/16"

Speakers

Audiophile design and performance

Raising sound reproduction standards
Signature Series component sets were designed to offer discerning listeners the best possible sound reproduction. The materials used in these component sets represent the state-of-the-art in terms of speaker design.

Composite Cone Design



The cone of any speaker must combine three important criteria to achieve accurate music production - mass, damping and rigidity. The Composite Cone Design used on the Signature Series speakers is essential to their incredible performance. The cone is a sandwich of glass fibre and a PMI (Polymethacrylimide) foam cone. This cone is extremely low in mass, while being rigid and well dampened at the same time.

Powder coated dampened aluminum basket
Providing a stable platform for the speaker to work from is critical. The cast and powder coated aluminum baskets used in the signature series speakers feature a low resonance design and incredible strength.

Rubber Surround
Signature Series speakers feature a rubber surround for enhanced flexibility, low distortion and reliability.

Chrome-Plated Terminals
The speaker terminals are chrome-plated push on types with minimal contact resistance and high transmission efficiency.

4-layer CCAW Voice Coil winding
Just like their big brothers, the Signature Series components employ a four-layer Copper Clad Aluminum Wire winding design. This design is low in mass, but helps create an intense magnetic field, further improving transient response.

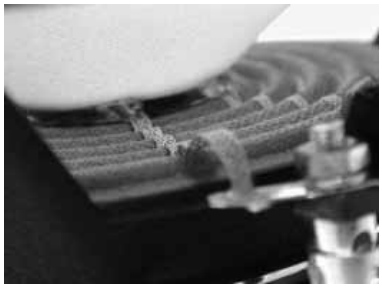
Fixed Phase Plug

Instead of a conventional, heavy dust cap, the Signature Series component speakers employ a fixed phase plug. This reduces moving mass for better transient performance. It also helps direct sound laterally, improving off-axis response.

Symmetrical Passive Crossover Network
At the heart of the Signature Series component set are its passive crossover networks. The symmetrical design networks offer excellent phase response for a coherent sound stage. They employ high-quality components for smooth frequency response and great power handling. The networks also have three tweeter output level selections to work in different system designs.

1” Titanium tweeter
Detail and accuracy in high frequencies is achieved using a 1-inch titanium dome tweeter and Neodynium magnet. A textile surround damps resonance so the tweeters sound smooth and detailed rather than harsh and aggressive. The large dome design offers improve off-axis response. Clarion provides both flush and surface mount hardware with each component set.

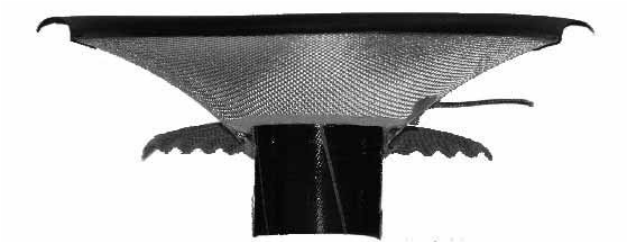
Woven Tinsel Leads
To ensure the complete absence of mechanical noise, Clarion has chosen to implement tinsel leads that are woven into the spider.



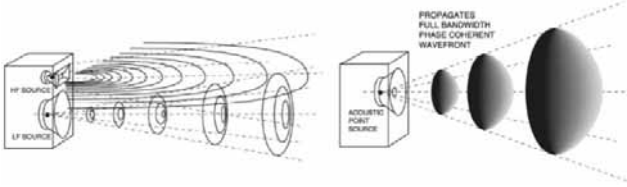
Speakers – Technologies

Invigorate the Senses With a New Type of Performance

Glass-Fiber Woofer Cone



With its woven glass fiber material, Clarion's Platinum series speaker cones feature the type of rigidity that will stand up to the rigorous in-car environment. This material also produces little to no distortion because of its ability to prevent the cone from flexing during high input levels. The result is rich, full bass that harmoniously melds with tight, accurate music reproduction.



In-Phase Coaxial Design

A key component to experiencing natural sound imaging and staging is the Clarion In-Phase Coaxial Design. The tweeter's "In- Phase" configuration minimizes the phase differential between the woofer and tweeter, and prevents the time lag between high- and low-frequency sounds from being audible to the listener. The result is a coherent, dynamic and easy-to-listen-to sound source.

Soft Dome Tweeters

By implementing soft dome silk tweeters, Clarion Platinum Series speakers provide you with a velvety-smooth, delicate and open treble performance. Blending damping and strength to provides you with superior detail, these silk soft dome tweeters react to even the most minute signals even at low input levels. This revolutionary design also provides Clarion's soft dome tweeters with a frequency response in excess of 120kHz.

Full-Featured 2-Way, 12 dB-per-Octave, Crossover Network

The Platinum Series' exclusively designed 2-Way passive network provides smooth sound transition between the woofers and tweeters. This design also maximizes the potential of each unit.

Dual Neodymium Magnet for Tweeter

For superb sound reproduction, Platinum Series tweeters utilize dual Neodymium magnets to achieve an extremely strong magnetic field – approximately 10 times that of typical ferrite magnets. With a magnetic flux density that far surpasses conventional speakers, the neodymium magnet reduces magnetic distortion, improves efficiency and increases low level resolution.

Strontium Magnet

There's a reason why Clarion's speaker systems add superior dimension to your music without compromising sound. Equipped with a highly conductive Strontium Magnet, Clarion's speaker systems tout a magnetic flux density that is significantly higher than conventional ferrite magnets. This is especially important when matching Clarion's speaker systems with a digital source.

Rubber Surrounds

The rolled edge of the surround not only allows for linear movement of the cone, but it also instantaneously stops cone movement after the signal has been reproduced. Whether fielding

a high or low input level, the highly elastic rubber surround allows Clarion's speaker systems to deliver smooth, well-balanced music with expansive, low distortion sound over the entire frequency.

The rubber surround also provides excellent resistance to UV and moisture damage - this provides extended longevity and reliability.

Rear-Vented Pole Piece
To prevent pressure from building up inside the center cap, which can result in increased amplitude distortion, an air vent is positioned to the rear of the pole piece. This not only prevents the voice coils from overheating, but also increases the air output from the woofer duct, resulting in a smooth cone movement. The increased airflow through the motor assembly helps to keep the magnet and voice cool. This reduces thermal compression and increased speaker longevity.

Change Your OEM Speakers for Improved System Sound

By replacing the factory speakers in your car with Phaze 1 speakers, you can enjoy clearer sound quality with added impact. Clarion's woofers use water-resistant and UV resistant mica-injected polypropylene cones. Tweeters use a balanced-drive PEI dome with superior high frequency characteristics together with metallized PEI mid-range cones for exceptional durability, excellent frequency characteristics, and outstanding efficiency.

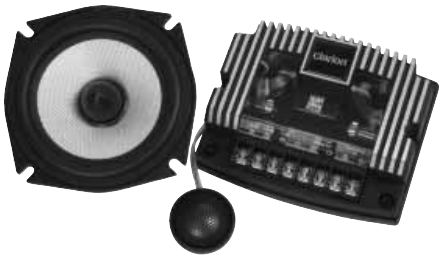
Titanium Metallized Mica-Injected Polypropylene Cone
Clarion Phase 1 speakers feature a Mica Injector Polypropylene cone. This cone material offers increased rigidity, damping and thermal stability as compared to conventional cone designs. Even when fielding fast transients, Phaze 1 speakers generate superior dynamic response and crystal clear sound. The process of adding minerals such as Mica to the polypropylene represents Clarions dedication to producing products that perform as impressively as they look.

The titanium coating features a brushed finish. This not only improves the appearance of the Phaze 1 speakers, but protects the petroleum based polypropylene from breaking down due to UV and Ozone exposure.

Metallized PEI Balanced-Drive Tweeter
Because of its superior physical properties that result in clearer output, polyetherimide boasts high rigidity, high durability and high resistance to extreme heat. That's why Clarion has outfitted its Phaze 1 Balanced Drive Tweeters with an integrated PEI diaphragm and voice coil bobbin, which dramatically improves the dynamic range of any sound system.

Phaze 1 Coaxials
Phaze 1 Coaxial speakers were developed for integrating the sound sources of multi-way speakers at a single point on the same axis. The speakers have been designed so that the low and midrange sounds from the woofer and the high range sound from the tweeter have the phases correctly aligned at the listening position. This allows smooth frequency response over a wide range and precise positioning of the sound field with superior phase characteristics.

Signature Series Speakers - Specifications



SSS500

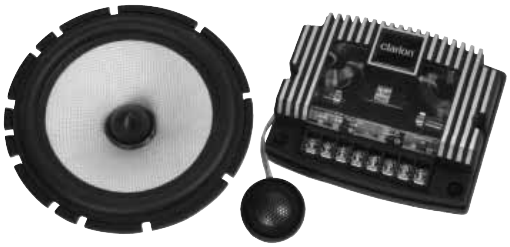
SIGNATURE SERIES 5.25” COMPONENT SET

Features

- 5.25" Composite Cone Design woofer
- Rubber Surround
- Fixed Phase Plug
- Powder coated cast aluminum basket
- 1" Pure Silk Dome Tweeter with Neodymium Magnet
- Passive Crossover network with three-position tweeter attenuation

Specifications

Continuous Power . . . . . 100 W
Maximum Power. . . . . ..200 W
Frequency Response . . . . . 50 Hz to 25 kHz
Mounting Depth . . . . . 2-7/16"
Cut-Out Size Width . . . . . 4-9/16"



SSS600

SIGNATURE SERIES 6.5” COMPONENT SET

Features

- 6.5" Composite Cone Design woofer
- Rubber Surround
- Fixed Phase Plug
- Powder coated cast aluminum basket
- 1" Pure Silk Dome Tweeter With Neodymium Magnet
- Passive Crossover network with three-position tweeter attenuation

Specifications

Continuous Power . . . . . 100 W
Maximum Power. . . . . ..200 W
Frequency Response . . . . . 35 Hz to 25 kHz
Mounting Depth . . . . . 2-13/16"
Cut-Out Size Width . . . . . 5-11/16"

Speakers – Features/Specifications

SRS1686

6-1/2" WOOFER AND 3/4" TWEETER WITH CROSSOVER

Features

- 6-1/2" Glass Fiber Woofer Cone with Rubber Surround
- Powerful Strontium Magnet for Dynamic Bass Response
- 3/4" Pure Silk Dome Tweeter with Dual-Neodymium Magnet
- 2-Way Tweeter Mounting (Variable-Angle Flush or Surface)
- High-Grade -12 dB/octave, 2-Way Crossover Network with Level Attenuator (0, -3 dB)
- 250-watt Maximum Music Power
- GM and Chrysler Adapter Included

Specifications

Sensitivity . . . . . 91 dB
Continuous Power . . . . . .45 W
Maximum Power. . . . .250 W
Mounting Depth . . . . . .2-7/16"
Cut-Out Size Width . . . . . .4-11/16"

SRR1686

"IN PHASE" 6-1/2" COAXIAL SPEAKER

Features

- 6-1/2" Glass-Fiber Woofer Cone with Rubber Surround
- 3/4" Pure Silk Dome Tweeter with Dual-Neodymium Magnet
- Extreme High Frequency Reproduction / 120kHz
- Powerful Strontium Magnet for Dynamic Bass Response
- In-Phase Coaxial Design for Best Sound Quality and Imaging
- GM Fit Basket / Chrysler Adapter Included

Specifications

Sensitivity 90dB
Continuous Power . . . . . .45 W
Maximum Power. . . . .250 W
Mounting Depth . . . . . 2-3/8"
Cut-Out Size Width . . . . . 4-11/16"

SRR6986

"IN PHASE" 6X9" COAXIAL SPEAKER

Features

- 6" x 9" Glass-Fiber Woofer Cone with Rubber Surround
- 1" Pure Silk Dome Tweeter with Neodymium Magnet
- Extreme High Frequency Reproduction / 80kHz
- Powerful Strontium Magnet for Dynamic Bass Response
- In-Phase Coaxial Design for Best Sound Quality and Imaging

Specifications

Sensitivity 92dB
Continuous Power . . . . . .50 W
Maximum Power. . . . .350 W
Mounting Depth . . . . . .3-1/8"

SRR1386

"IN PHASE" 5-1/4" COAXIAL SPEAKER

Features

- 5-1/4" Glass-Fiber Woofer Cone with Rubber Surround
- 3/4" Pure Silk Dome Tweeter with Dual-Neodymium Magnet
- Extreme High Frequency Reproduction / 120kHz
- Powerful Strontium Magnet for Dynamic Bass Response
- In-Phase Coaxial Design for Best Sound Quality and Imaging

Specifications

Sensitivity 90dB
Continuous Power . . . . . .40 W
Maximum Power. . . . .200 W
Mounting Depth . . . . . .2-1/16"
Cut-Out Size Width . . . . . .4-1/2"

Speakers – Features/Specifications

SRC4696

4" X 6" 2-WAY PLATE SPEAKER

Features

- 4" Glass-Fiber Woofer Cone with Rubber Surround
- 3/4" Pure Silk Dome Tweeter with Dual-Neodymium Magnet
- Powerful Strontium Magnet for Dynamic Bass Response
- Extreme High Frequency Reproduction / 120kHz
- Designed for Direct OEM Replacement

Specifications

Sensitivity 90dB
Continuous Power . . . . . .35 W
Maximum Power. . . . .150 W
Mounting Depth . . . . . .1-7/8"

SRC5796

5" X 7" 2-WAY PLATE SPEAKER

Features

- 5" Glass-Fiber Woofer Cone with Rubber Surround
- 3/4" Pure Silk Dome Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response
- Extreme High Frequency Reproduction / 120kHz
- Designed for Direct OEM Replacement
- 6x8" Ford and Mazda Adaptor Included

Specifications

Sensitivity 90db
Continuous Power . . . . . .35 W
Maximum Power. . . . .170 W
Mounting Depth . . . . . .2-1/8"

SRH292HX

3/4" COMPONENT TWEETER

Features

- 3/4" Pure Silk Dome Tweeter
- Powerful Neodymium magnet
- 250-watt Maximum Music Power (with crossover)
- In-Line 6dB/Octave Crossover included
- Integrated Dome Protection / Diffuser
- Surface or Flush Mount Design

Specifications

Sensitivity 90
Continuous Power . . . . . .45 W
Maximum Power. . . . .250 W
Frequency Response . . . . . 2,000 Hz to 120 kHz

SRK5

1/2-DIN CENTER CHANNEL SPEAKER WITH AMPLIFIER

- 1/2-DIN Fixed Application
- Fits in all DIN and 1/2-DIN Installation Kits
- 50 W Amplifier
- 20 watts RMS
- RCA Audio Input
- Five 3/4" Full-Range, 4-Ohm Speakers in Sealed Enclosure; Two 1" Rear-Mounted, Midbass Reinforcement Speakers Ported to Enclosure Front
- Excellent Solution for 5.1 Surround Sound Systems

SRR6916

6" X 9" 3-WAY SPEAKER

Features

- 6" x 9" MIPP Woofer Cone
- 2-5/8" Metallized PEI Cone Midrange
- 5/8" Dome Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response

Specifications

Sensitivity 92
Continuous Power . . . . . .40 W
Maximum Power. . . . .250 W
Mounting Depth . . . . . .2-13/16"

SRR6946

6" X 9" 4-WAY SPEAKER

Features

- 6x9" TM-MIPP Woofer Cone
- 2-5/8" Metallized PEI Balanced Drive Midrange
- 5/16" Dome Tweeter and Super Dome Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response

Specifications

Sensitivity 92
Continuous Power . . . . . .50 W
Maximum Power. . . . . .350 W
Mounting Depth . . . . . .2-15/16"

SRR1316

5-1/4" 2-WAY SPEAKER

Features

- 5-1/4" MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response

Specifications

Sensitivity 91
Continuos Power . . . . . .30 W
Maximum Power. . . . .150 W
Mounting Depth . . . . . .1-13/16"
Cut-Out Size. . . . . .4-1/2"

SRS1326

5-1/4" COMPONENT SPEAKER SYSTEM

Features

- 5-1/4" IM-MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter
- 2-Way Tweeter Mount (Variable Angle Flush / Surface Mount)
- Powerful Strontium Magnet for Dynamic Bass Response
- In-Line -6dB/Octave Crossover Network
- GM Fit Basket Design / Chrysler Adapter Included

Specifications

Sensitivity 90
Continuos Power . . . . . .40 W
Maximum Power. . . . . .200 W
Mounting Depth . . . . . .1-13/16"

Speakers – Information

SRR1616

6-1/2" COAXIAL SPEAKER

Features

- 6-1/2" MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response
- GM Fit Basket / Chrysler Adapter Included

Specifications

Sensitivity 91
Continuous Power . . . . . .35 W
Maximum Power. . . . .180 W
Mounting Depth . . . . . .1-7/8"
Cut-Out Size Width . . . . . .4-7/8"

SRR1636

6-1/2" 3-WAY SPEAKER

Features

- 6-1/2" TM-MIPP Woofer Cone
- 1-3/16" Metallized PEI Balancer Drive Midrange
- 5/8" Dome Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response
- GM Fit Basket / Chrysler Adapter Included

Specifications

Sensitivity 91
Continuous Power . . . . . .40 W
Maximum Power. . . . .230 W
Mounting Depth . . . . . .2-3/16"
Cut-Out Size Width . . . . . .4-15/16"

SRR1646

6-1/2" 4-WAY SPEAKER

Features

- 6.5" TM-MIPP Woofer Cone
- 1-3/16" Metallized PEI Balanced Drive Midrange
- 5/8" Dome Tweeter and Super Dome Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response
- GM Fit Basket Design / Chrysler Adaptor Included

Specifications

Sensitivity 91
Continuous Power . . . . . .45 W
Maximum Power. . . . .280 W
Mounting Depth . . . . . .2-3/16"
Cut-Out Size Height and Width. . . . . .4-7/8"

SRS1626

6-1/2" COMPONENT SPEAKER SYSTEM

Features

- 6-1/2" IM-MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter
- 2-Way Tweeter Mount (Variable Angle Flush / Surface Mount)
- Powerful Strontium Magnet for Dynamic Bass Response
- In-Line -6dB/Octave Crossover Network
- GM Fit Basket Design / Chrysler Adapter Included

Specifications

Sensitivity 91
Continuous Power . . . . . .40 W
Maximum Power. . . . .200 W
Mounting Depth . . . . . .2-15/16"

SRC6836

6X8" 3-WAY SPEAKER

Features

- 6x8" TM-MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter
- 5/16" Done Tweeter
- Powerful Strontium Magnet For Dynamic Bass Response
- Designed for Direct OEM Replacement

Specifications

Sensitivity 92dB
Continuous Power . . . . . .40 W
Maximum Power. . . . . .220 W
Mounting Depth . . . . . .2-5/16"

SRC6816

6X8" 2-WAY SPEAKER

Features

- 6x8" MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter
- Powerful Strontium Magnet For Dynamic Bass Response
- Designed for Direct OEM Replacement

Specifications

Sensitivity 91dB
Continuous Power . . . . . .30 W
Maximum Power... . . . . .170 W
Mounting Depth . . . . . .2-5/16"

SRC5736

5X7" 3-WAY SPEAKER

Features

- 5x7" TM-MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Midrange
- 5/16" Dome Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response
- Designed for OEM replacement

Specifications

Sensitivity 91dB
Continuous Power . . . . . .35 W
Maximum Power. . . . .200 W
Mounting Depth . . . . . .2-1/8"

SRC5716

6-1/2" 2-WAY SPEAKER

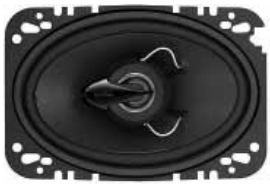
Features

- 5X7" Mica-Injected Polypropylene Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter with Neodymium Magnet
- Powerful Strontium Magnet for Dynamic Bass Response
- GM and Chrysler Adapter Included

Specifications

Sensitivity 91dB
Continuous Power . . . . . .30 W
Maximum Power. . . . .150 W
Mounting Depth . . . . . .2-1/6"

Speakers – Information



SRC4617

4X6" 2-WAY SPEAKER

Features

- 4"x6" MIPP Woofer Cone
- 1" Metallized Balanced-Drive Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response
- Designed for Direct OEM Replacement

Specifications

Sensitivity 91dB
Continuous Power . . . . . .25 W
Maximum Power. . . . .120 W
Mounting Depth . . . . . .1-13/16"

SRC916

3-1/2" 2-WAY SPEAKER

Features

- 3-1/2" MIPP Woofer Cone
- 1" Metallized PEI Balanced-Drive Tweeter
- Powerful Strontium Magnet for Dynamic Bass Response
- Designed for Direct OEM Replacement

Specifications

Sensitivity 89dB
Continuous Power . . . . . .20 W
Maximum Power. . . . .60 W
Mounting Depth . . . . . .1-5/16"

SRR1016

4" 2-WAY SPEAKER

Features

- 4" MIPP Woofer Cone
- 1" Metallized PEI Balanced-Driver Tweeter
- Powerfull Strontium Magnet for Dynamic Bass Response

Specifications

Sensitivity 90dB
Continuous Power . . . . . .30 W
Maximum Power. . . . .120 W
Mounting Depth . . . . . .1-11/16"

SRH206

1" COMPONENT TWEETER

Features

- 1" Metallized PEI Balanced-Drive Tweeter
- Powerful Neodynium magnet for Dynamic Response
- 2-Way Tweeter mount (Variable Angle Flush / Surface Mount)

Specifications

Continuous Power . . . . . .60 W
Maximum Power. . . . .200 W
Mounting Depth . . . . . .11/16"

UNGO ProSecurity

Ungo – Information

K20

KEYLESS ENTRY SYSTEM

Features

- (2) 4-Button Remote Transmitters (SAA474U)
- 2 Auxiliary Outputs
- On-Board Relays for Door Locks and Dome Light Supervision
- Horn Honk Output
- Driver's Door Unlock Priority Compatible
- Comfort Closure
- (+/-) Parking Light Output
- Common Features

RK1

REMOTE ENGINE START WITH KEYLESS ENTRY

Features

- (2) 4-Button Remote Transmitters (SAA474U)
- 2 Auxiliary Outputs
- Short Run / Turbo Timer Mode
- Compact Satellite Relay Pack
- Horn Honk Output
- (+/-) Door Lock Outputs
- Driver's Door Unlock Priority Compatible
- (+/-) Parking Light Output
- ProSecurity Programmer Compatible
- Common Features
- Common Remote Start Features

RK210

2-WAY REMOTE START WITH KEYLESS ENTRY SYSTEM

Features

- (1) 2-Way LCD Remote Transmitter (SAA477U)
- (1) 4-Button Remote Transmitter (SAA474U)
- 2 Auxiliary Outputs
- Short Run / Turbo Timer Mode
- Compact Satellite Relay Pack
- Horn Honk Output
- (+/-) Door Lock Outputs
- Driver's Door Unlock Priority Compatible
- (+/-) Parking Light Output
- ProSecurity Programmer Compatible
- Common Features
- Common Remote Start Features

RS10

REMOTE ENGINE START WITH KEYLESS ENTRY

Features

- (1) 4-Button Remote Transmitter (SAA474U)
- 1 Auxiliary Output
- (-) Door Lock Outputs
- Short Run / Turbo Timer Mode
- (+/-) Parking Light Output
- Comfort Closure

S100

SECURITY SYSTEM

Features

- (2) 4-Button Remote Transmitters (SAA474U)
- 2 Auxiliary Outputs
- (+/-) Parking Light Output
- ProSecurity Programmer Compatible
- Common Features
- Common Security Features

S670

TWO-WAY SECURITY SYSTEM

Features

- (1) 2-Way LCD Remote Transmitter (SAA477U)
- (1) 4-Button Remote Transmitter (SAA474U)
- 3 Auxiliary Outputs
- On-Board Relays for Door Locks, Dome Light Supervision, and Auxiliary 1
- Horn Honk Output
- (+/-) Parking Light Output
- Comfort Closure
- Common Features
- Common Security Features

SR1000

SECURITY SYSTEM WITH REMOTE ENGINE START

Features

- (2) 4-Button Remote Transmitters (SAA474U)
- 3 Auxiliary Outputs
- Short Run / Turbo Timer Mode
- Compact Satellite Relay Pack
- Horn Honk Output
- Driver's Door Unlock Priority Compatible
- (+/-) Parking Light Output
- ProSecurity Programmer Compatible
- Common Features
- Common Remote Start and Security Features

SR6000

TWO-WAY SECURITY SYSTEM WITH REMOTE ENGINE START

Features

- (1) 2-Way LCD Remote Transmitter (SAA477U)
- (1) 4-Button Remote Transmitter (SAA474U)
- 3 Auxiliary Outputs
- Short Run / Turbo Timer Mode
- Compact Satellite Relay Pack
- Driver's Door Unlock Priority Compatible
- (+/-) Parking Light Output
- ProSecurity Programmer Compatible
- Common Features
- Common Remote Start and Security Features

UNGO – Features and Technologies

Common UNGO Features

Anti-Code Grabbing Technology
Individual Remote Recognition
Keyless Entry*
Remote Enabled Valet
Hyper Blue Status LED
Remote Panic
Selectable Ignition Controlled Door Locks
ProSecurity Starter Disable*
ProSecurity Power Up
Progressive Door Unlock*
Dome Light Supervision Output*
Trunk/Hatch Release Output*

* May Require Additional Parts & Labor

Common Security Features

Extended Range Antenna
Dual Stage Impact Sensor
Programmable Override Sequence
Remote Silent Arm/Disarm Capability
Event History Diagnostics
Selectable Siren Duration and Tones
False Alarm Prevention Circuitry

Common Remote Start Features

Extended Range Antenna
Anti-Grind Circuitry
Tachometer or Voltage Sensing
Gasoline or Diesel Vehicle Compatible
Over and Under Rev Protection
Built-in Wait-to-Start Timer
Selectable Run Timer
Short Run Timer / Turbo Timer Mode
Rear Defroster Activation

UNGO Feature Descriptions

Anti-Carjacking
The optional anti-carjacking system feature is designed to ensure that any unauthorized user of the vehicle (even using the keys and remote control) will not be able to permanently separate the owner from their vehicle.

This system cannot prevent a carjacking attempt; however, it does ensure that if an unauthorized user takes the vehicle, it will be disabled (after several progressive warnings) as a safely as possible.

Anti-Code Grabbing Technology (a.k.a. Code Hopping):
The receiver and remotes use a mathematical formula called an algorithm to change their code each time the remote is used. This technology has been developed to increase the security of the unit. The control unit knows what the next codes should be. This helps to keep the remote “in sync” with the control unit even if you use the remote control out of range of the vehicle.

Anti-Grind Circuitry
Whenever the vehicle is remote started, advanced anti-grind circuitry prevents the starter from engaging, even if the key is turned to the start position. This prevents damage to the starter motor if the key is turned to the start position during remote start operation.

Built-in Wait-to-Start Timer
Diesel vehicles need adequate time to warm up the glow plugs prior to starting. When the remote start is activated, the wait-to-start timer will allow the glow plugs to properly warm up before engaging the starter circuit. This feature prevents damage to the motor and glow plugs during remote start operation.

Comfort Closure
If programmed ON the door lock output will activate the Comfort Closure output for 20 seconds. This output will begin 200mS after the final door lock output has completed regardless of the door lock programming. This feature is designed to integrate with vehicle that can close the power windows and sunroof by holding the key in the driver door lock position, and will operate on both single input systems and two pulse dead bolt systems.

Dome Light Supervision Output
The dome light will illuminate for 30 seconds each time the system is disarmed using the remote control. This is useful for seeing inside the vehicle at night prior to entering it.

Dual Stage Impact Sensor
A sensor mounted in the vehicle that is designed to pick up impacts to the vehicle or glass. Depending on the strength of the impact, the sensor can determine whether it's an accidental contact or actual violation attempt.

Event History Diagnostic
ProSecurity systems can provide notification that the alarm was previously triggered. The status LED will indicate which zone was involved. The system will retain this information in its memory, until the next time the ignition key is turned ON.

Extended Range Antenna
An optional external receiver/antenna used to upgrade the remote/receiver performance in areas of high radio interference such as military bases, airports, and hospitals.

False Alarm Prevention
It prevents annoying repetitive sequences due to faulty door pins switches or environmental conditions such as thunder, jackhammers, airport noise, etc.

Gasoline or Diesel Vehicle Compatible
ProSecurity remote start systems can be installed into either gasoline or diesel vehicles.

Hyper Blue LED
A blue LED (light Emmiting Diode) mounted at a discretionary location inside the vehicle. It is used to indicate the status of your system.

Individual Remote Recognition (IDR)
Individual Remote Recognition makes it possible to program different settings for each remote that is used with the system. Then, whenever a specific remote is used, the system will recall the setting assigned to that remote. IDR lets up to four users of the system have different settings that meet their specific needs. It is almost like having four separate alarms in your vehicle, one for each user.

Keyless Entry
Allows for easy entry or exiting of the vehicle without having fumbling around for keys. May require additional parts and labor.

Over and Under Rev Protection
The system monitors the engine speed and will automatically shut the engine off if the RPMs rise above or fall below the programmed levels. This feature prevents damage to the motor due to fuel delivery system failures or other problems, which may cause the engine to race.

Programmable Override Sequence
ProSecurity systems can be programmed to respond to one to five pulses of the Valet/Override Switch for the disarm function.

Progressive Door Unlock
For added security, the ProSecurity system can be configured to unlock the driver's door only, leaving the passenger doors locked. Pressing the UNLOCK button an additional time will unlock the passenger doors. This option requires additional parts and labor.

ProSecurity Power Up
The ProSecurity system will store its current state of non-volatile memory. If the power is lost and then reconnected the system will recall the stored state from memory. This means if the unit is in Valet Mode and the battery is disconnected for any reason, when the battery is reconnected the unit will still be in Valet Mode.

ProSecurity Starter Disable
An automatic switch controlled by your system that prevents the vehicle's starter from cranking whenever the system is armed. The vehicle is never prevented from cranking when the system is disarmed, in Valet Mode, or if the starter interrupt switch itself fails.

Rear Defroster Activation
During remote start operation, the rear defroster can be activated. This option requires additional parts and labor.

Remote Enabled Valet (REV)
The security system will not arm, even with the remote, but all convenience functions (door locks, trunk release, etc.) will still continue to work normally. REV allows access to Valet Mode without having to disclose the location of the Valet/ Override switch.

Remote Panic
If you are threatened in or near your vehicle, you can attract attention by triggering the system with your remote control. Just press the "PANIC" or "LOCK" button for two seconds, and you will enter Panic Mode. The siren will sound and the parking lights will flash for the programmed siren duration. To stop Panic Mode at any time, press the "LOCK" button on the remote.

Remote Silent Arm/Disarm Capability
The siren chirps upon arm or disarm can be temporarily eliminated for that one operation only. The siren arm/disarm chirps can be turned off permanently, if desired. The siren chirps will also be eliminated during the warn-away trigger of the Dual Stage Impact Sensor.

Selectable Ignition Controlled Door Locks
When the ignition is turned ON, the doors will lock within 3 seconds and unlock when the ignition is turned OFF. Ignition controlled lock and unlock are independent features are can be programmed separately.

Selectable Siren Duration and Tones
The duration of the siren can be programmed to either 30 or 60 seconds. Some states have laws regulating how long a security system can sound. The multi-tone sirens included with ProSecurity systems can be easily modified to select desired tones or single tone.

Short Run Timer / Turbo Timer Mode
Short run turbo mode keeps the engine running after arriving at your destination for a programmable period of time.

Tachometer or Voltage Sensing
ProSecurity remote start systems either use a tachometer signal or sense the voltage of the vehicle during remote start activation. These signals inform the remote start system that the vehicle has successfully started and is running.

Trunk/Hatch Release Output
The system's auxiliary output can be programmed to operate a factory power release for the vehicle's trunk or hatch. If the factory release is not power activated, an optional trunk release solenoid can often be added.

Obtaining Optimal Range

Mounting the Extended Range Antenna:

1. Clean the mounting area with a quality glass cleaner or alcohol to remove any dirt or residue.
2. Plug the receiver/antenna cable into the receiver/antenna.
3. Mount the receiver/antenna vertically using the supplied double-sided tape.
4. Route the receiver/antenna cable to the control module and plug it into the four-pin antenna connector.

Important:

• To achieve the best possible range, DO NOT leave the antenna cable bundled up tightly underneath the dash. Try to extend the cable the full length during installation.

• DO NOT mount the control module to close the vehicle's Body Control Module and/or Electronic Control Modules.

Mounting the Standard Antenna:

1. Route the antenna as high up as possible, extending it to its full length.
2. Secure it in place using a cable tie.

Important:

• DO NOT cut or extend the antenna, as it's tuned precisely to the control unit.

• Route the antenna away from moving parts under the dash and from the vehicle's Body Control Module and/or Electronic Control Modules.

Mounting the Control Unit:

• Do not mount or secure the control unit to close to the vehicle's Body Control Module and/or Electronic Control Modules.

• Do not mount or secure the control unit to close sources of heat, such as the heater core and/or air ducts.

• Ground the control unit to a clean, paint-free sheet metal location using a factory bolt that DOES NOT have any vehicle component grounds attached to it. A screw should only be used when in conjunction with a two-sided lock washer. Under dash brackets and door sheet metal are not acceptable ground points.

It is recommended that all security components be grounded at the same location.

Turning Off the Anti-Code Grabbing Technology (a.k.a. Code Hopping):

Although this is a feature designed to prevent the remote transmitters from being cloned and retransmitted to the control unit, it is virtual impossible to do. "Code Grabbers" have a very limited range, usually required to within 5 feet of the remote transmitter while the button is being depressed. By turning the off the Anti-Code Grabbing feature, it can increase the receiving/transmitting range by 30-35%.

Refer to the "System Features Menu" for the Feature Number and programming instructions.

Double Stacking (2) CR2016 Batteries:

The CR2032 3-volt micro lithium coin cell battery inside of the SAA474U (4-button) remote transmitter can be substituted with (2) CR2016 3-volt batteries. This can increase the range between 65-75%, depending on the surroundings.

Procedure:

1. Insert a small flat head screwdriver into the notch on the bottom of the remote transmitter.
2. Gently twist the screwdriver to spreading apart the two halves of the remote transmitter.
3. Open up the remote transmitter exposing the CR2032 battery and slide it out.
4. Slide (2) CR2016 batteries into the battery holder with the "+" facing upwards. (It may be easier to slide one battery in at a time. With the first battery in place, slide the second battery between the PC board and battery.)
5. Prior to closing the two halves of the remote transmitter, verify the batteries are installed correctly by pressing any of the buttons. The green LED indicator should illuminate when a button is pressed. If the LED does not illuminate, double-check the direction of the batteries. The "+" should be facing upwards matching the "+" on the battery retaining clip.
6. Snap together the two halves of the remote transmitter.

Obtaining a Tachometer Reference Signal

The tachometer reference signal is an essential signal for the safe operation of a remote start system. This signal informs the remote start module that the vehicle has successfully started and is running. It can also determine whether the vehicle is idling at a safe RPM level. In the event the vehicles idle is racing or below safer operating level, the remote start module will shut down.

To test for a tachometer wire, a multi-meter capable of test AC voltage must be used. The tachometer wire will show between 1V and 6V AC. In multi-coil systems, the system can learn individual coil wires. Individual coil wires in a multi-coil ignition system will register lower amounts of AC voltage. Also, if necessary, the system can use a fuel injector control wire for engine speed sensing. Common locations for a tachometer wire are at the ignition coil, back of the gauge cluster, engine computers, and automatic transmission computers.

How to Find a Tachometer Wire with a Multi-Meter:
1. Set the multi-meter to ACV or AC voltage (12V or 20V is fine)
2. Attach the (-) probe of the meter to chassis ground.
3. Start the vehicle and allow it to reach its normal idle speed.
4. Probe the wire you suspect of being the tachometer wire with the red probe of the meter.
5. If it's the correct wire the meter will read between 1V and 6V.

Multi-Coil Systems:
1. Examine the individual coils and determine which wires are common on each coil. (Example: 2002 Chevy Pick-up: Each coil has 4 wires, three common wires on each coil and the 4th wire changes.)
2. The "different" colored wire can be used for the tachometer reference signal for the remote start module. (Only one coil wire is necessary.)
3. Teach tachometer reference signal to the remote start module.

It is highly recommended to solder this connection, due to the heat generated inside the engine bay. Using t-taps or scotch-locks are likely to fail due to the heat.

Fuel Injector Wire:
1. Examine the individual fuel injectors and determine which wire(s) are common on each fuel injector.
2. The "different" colored wire can be used for the tachometer reference signal for the remote start module. (Only one fuel injector wire is necessary.)
3. Teach tachometer reference signal to the remote start module.

It is highly recommended to solder this connection, due to the heat generated inside the engine bay. Using t-taps or scotch-locks are likely to fail due to the heat.

Tachometer Reference Options

Tachless
If programmed to the voltage sense setting, the unit will crank the starter for a preset time during. Once the starter has been engaged, the system will check the voltage level to verify the engine is running.

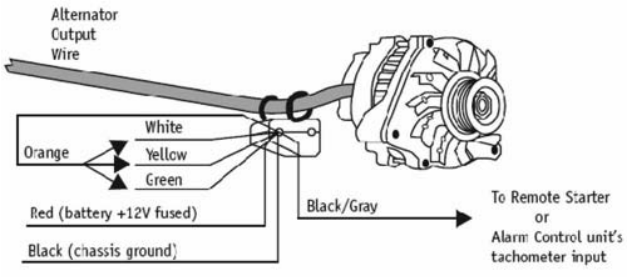
When using tachless operation, it is essential to determine the correct crank time to prevent damage to the starter. It may take several remote start activations to determine the crank time.

Some vehicles have many accessories, which are turned on during remote start activation. In these vehicles, the variation of voltage between the engine off and the vehicle running is very slight and the remote start module may "think" the vehicle has not started. This can cause the remote start module to shut down after the vehicle has been started. If this is the case, the Voltage Check Level must be set to the LOW position.

Voltage sensing is not recommended in areas that experience extreme cold temperatures. The resistance in the vehicles wiring increases which can cause intermittent remote start reliability.

454T: Alternator RPM Monitor

The 454T Alternator RPM Monitor is for use with remote engine starts as an alternative to direct connection to the vehicle's tachometer or fuel injector wire. It detects electrical spikes in the vehicles electrical system and converts them into an output that simulates a tachometer.



Remote Start Terms and Definitions

Immobilizer (a.k.a.: Transponder)

The Immobilizer uses an antenna ring around the ignition cylinder to energize a small transponder chip hidden in the ignition key. When the ignition is turned on, the chip is energized and the antenna rings sends the code to the Immobilizer control unit. The vehicle will only start if the code matches the one programmed into the vehicle.

Passkey/VATS

The Passkey/VATS system consists of four parts: the Passkey cylinder, the ignition switch, the instrument cluster panel (IPC), and the power train control module (PCM). The system requires that the key cylinder be mechanically turned using a key. When the key cylinder is properly turned, it generates a resistance code (R-Code), which is sent to the IPC. The vehicle will only start if the R-Codes match the key and key cylinder.

Passlock 2

The Passlock 2 system must see the correct resistance code at the correct time. When the ignition switch is turned to the crank position, the "Bulb Check" wire is switched to ground. This starts a time window during which the instrument cluster panel (IPC) analyzes the resistance code (R-Code). If the R-Code is valid and is received in the proper window of time, the IPC sends a code via data bus to the PCM to enable the fuel injection system. If the key cylinder itself is pulled out or damaged, it will not generate the resistance code and the vehicle will not run.

Passkey 3

The Immobilizer uses an antenna ring around the ignition cylinder to energize a small transponder chip hidden in the ignition key. When the ignition is turned on, the chip is energized and the antenna rings sends the code to the Immobilizer control unit. If the code is incorrect the vehicle will not start.

PATS

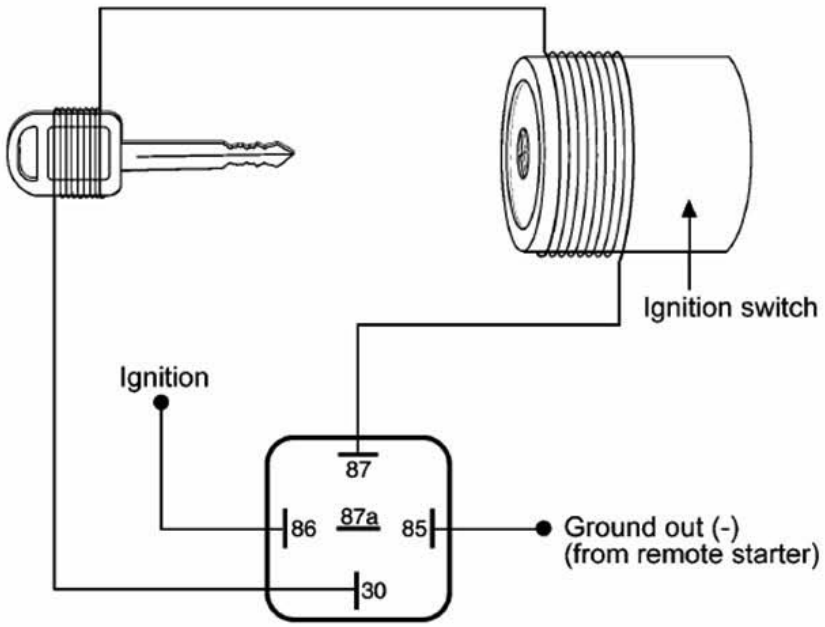
Passive Anti-Theft System (PATS) uses a specially programmed key to start the vehicle, similar to the Immobilizer. It uses an antenna ring around the ignition cylinder to energize a small transponder chip hidden in the ignition key. When the ignition is turned on, the chip is energized and the antenna ring sends the code to the PATS control unit. If the code is incorrect the vehicle will not start.

Resistor

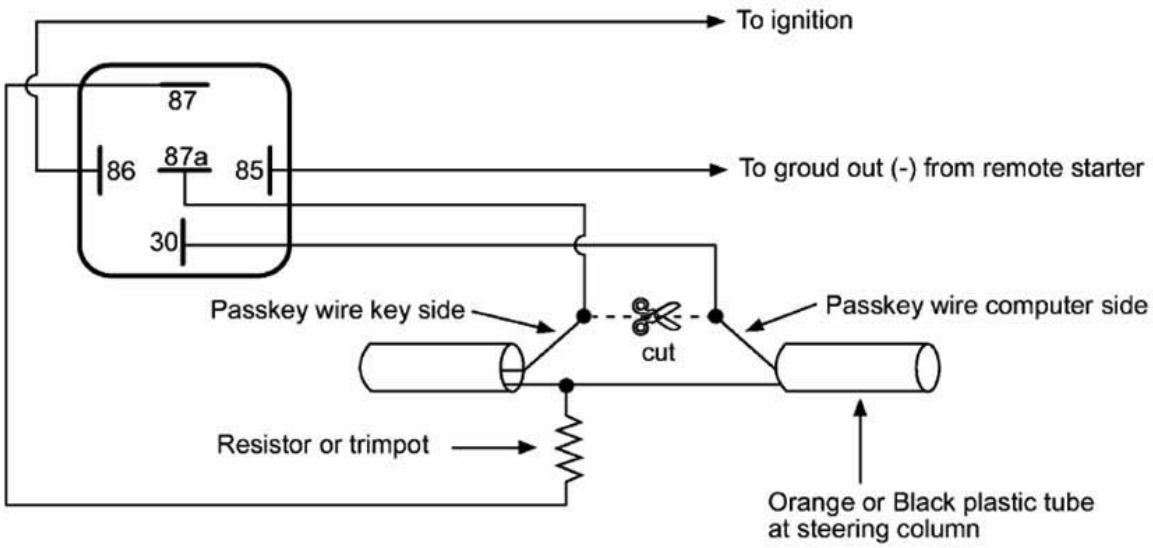
One of the components necessary in interface with VATS factory anti-theft systems. A resistor(s) are used in conjunction to reproduce the resistance code (R-Code) embedded in the vehicle's key

UNGO – Application Notes

HOW IT WORKS: There is a small chip in the ignition key called a ***transponder***. When the key is inserted into the ignition switch it sends a code to the vehicles computer through a receiver coil mounted to the barrel. Once the computer has identified it as a valid key, it enables the starter and fuel management systems. At present, there is no way to get around this security without sacrificing 1 of the vehicles keys and installing it under the dash as shown in our diagram. If the vehicle only has 2 keys and 1 can not be spared, a new key must be purchased ***and coded*** to the vehicle by the dealer. That key can then be used in the bypass.

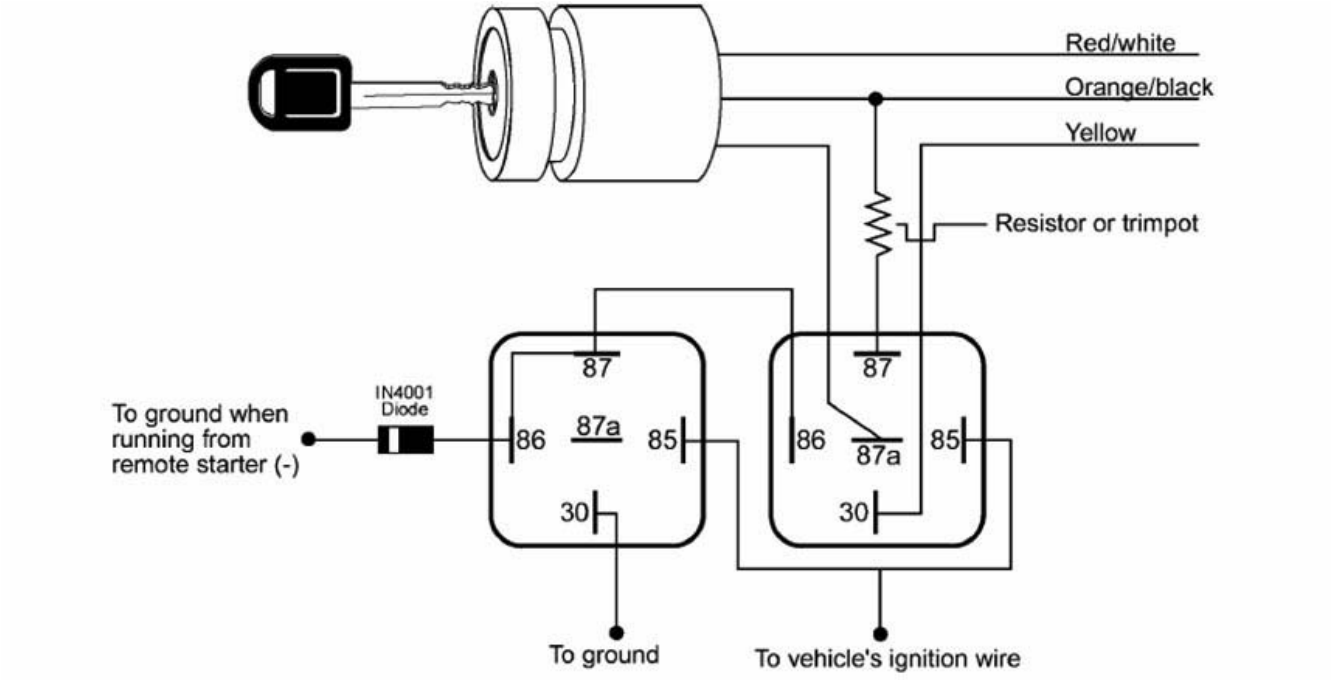


Use small 24-26 gauge wire. Wrap the wire around the up most front of the ignition switch approximately 9-10 times, then extend the wire out about 12-15 inches and wrap it around the key about 9-10 times. Take both ends of the wire and connect then to a relay as shown above. The **GROUND OUT** on pin #85 of the relay refers to the wire from your remote starter that goes to ground when the starter is activated. Once this circuit is tested and working, the keyway should either be cut in half or the key should be hidden well under the dash.



This system uses a resistor in the key, use a digital volt meter set to ohms and put 1 lead on each side of the vats chip in the center of the key, find a resistor to match your reading and proceed to wire a relay as per the diagram.
Locate the Orange or black tube running down the steering column from the ignition switch. Cut open the tube to expose the passkey wires inside. Your resistor or trumpet should be within +/- 10 ohms of the key. Either of the passkey wires can be cut. GM uses only a fixed number of different resistors with their **PASSKEY/VATS** system, your measurement should correspond to one of the following values.

390 Ohms	**1800 Ohms**	**7500 Ohms**
520 Ohms	**2370 Ohms**	**9530 Ohms**
680 Ohms	**3010 Ohms**	**11800 Ohms**
885 Ohms	**3740 Ohms**	
1130 Ohms	**4750 Ohms**	
1470 Ohms	**6040 Ohms**	



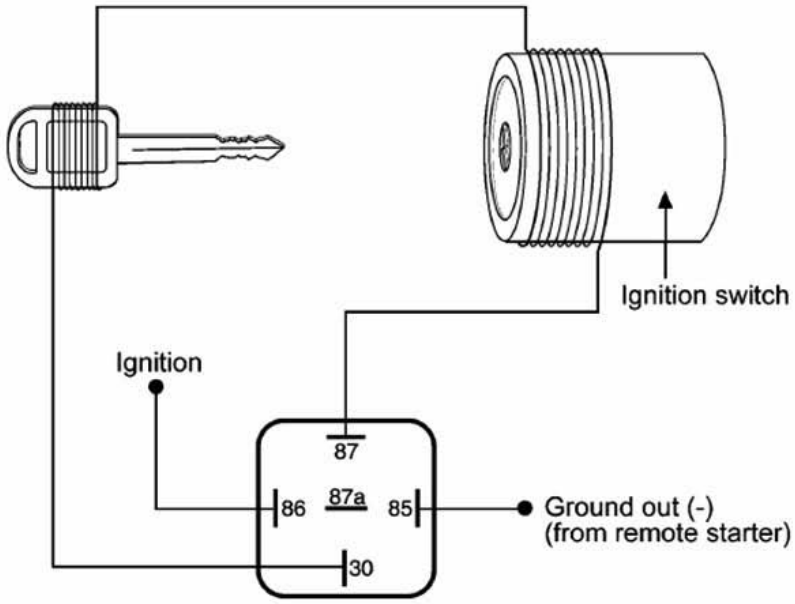
All GM trucks 1998 & up are equipped with PASSLOCK II security systems. In many ways it is like the PASSLOCK I system found on the 96-97 Cavalier and Sunfire, but with a few small changes. There is no bulb test wire on the ignition switch and the measurement for your resistor must be taken with the engine running.

1. Start the car with the key
2. Locate the 3 small wires (YELLOW, ORANGE/BLACK and RED/WHITE) coming from the ignition switch.
3. Separate the wires and cut the YELLOW wire in half.
4. Splice open the ORANGE/BLACK wire but do not cut it.
5. Use a digital ohm meter, attach 1 lead to the ORANGE/BLACK wire and the other lead to the Key side of the YELLOW wire.
6. Find a resistor of the same value +/- 10 ohms.
7. Wire 2 relays as shown

PLEASE NOTE: This is a fuel cut-off system. If the PASSLOCK II system is not properly bypassed the engine will immediately shut down after remote start. If this occurs verify that all the wiring is properly connected and that your resistor is within the allowable parameters.

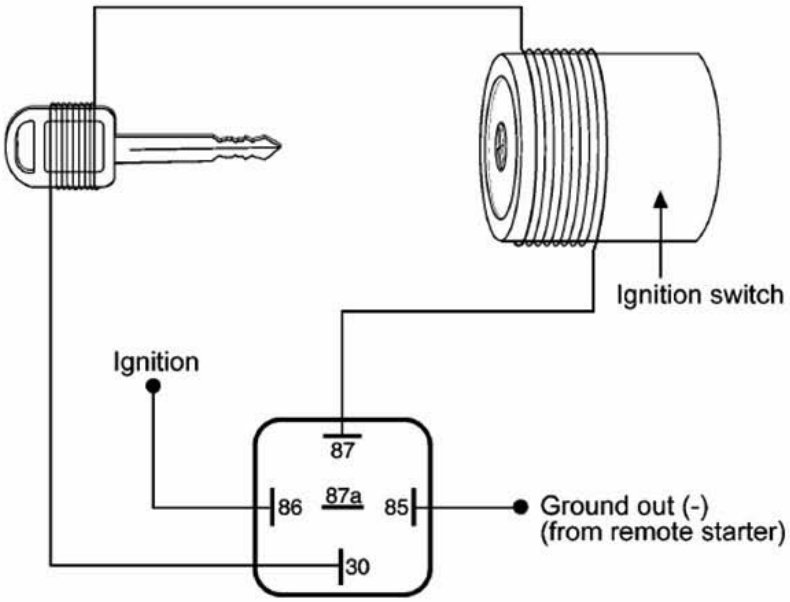
Interfacing with Passkey 3 systems with Relays and Key

HOW IT WORKS: There is a small chip in the ignition key called a ***transponder***. When the key is inserted into the ignition switch it sends a code to the vehicles computer through a receiver coil mounted to the barrel. Once the computer has identified it as a valid key, it enables the starter and fuel management systems. At present, there is no way to get around this security without sacrificing 1 of the vehicles keys and installing it under the dash as shown in our diagram. If the vehicle only has 2 keys and 1 can not be spared, a new key must be purchased ***and coded*** to the vehicle by the dealer. That key can then be used in the bypass.



Use small 24-26 gauge wire. Wrap the wire around the up most front of the ignition switch approximately 9-10 times, then extend the wire out about 12-15 inches and wrap it around the key about 9-10 times. Take both ends of the wire and connect then to a relay as shown above. The **GROUND OUT** on pin #85 of the relay refers to the wire from your remote starter that goes to ground when the starter is activated. Once this circuit is tested and working, the keyway should either be cut in half or the key should be hidden well under the dash.

HOW IT WORKS: There is a small chip in the ignition key called a ***transponder***. When the key is inserted into the ignition switch it sends a code to the vehicles computer through a receiver coil mounted to the barrel. Once the computer has identified it as a valid key, it enables the starter and fuel management systems. At present, there is no way to get around this security without sacrificing 1 of the vehicles keys and installing it under the dash as shown in our diagram. If the vehicle only has 2 keys and 1 can not be spared, a new key must be purchased ***and coded*** to the vehicle by the dealer. That key can then be used in the bypass.



Use small 24-26 gauge wire. Wrap the wire around the up most front of the ignition switch approximately 9-10 times, then extend the wire out about 12-15 inches and wrap it around the key about 9-10 times. Take both ends of the wire and connect then to a relay as shown above. The **GROUND OUT** on pin #85 of the relay refers to the wire from your remote starter that goes to ground when the starter is activated. Once this circuit is tested and working, the keyway should either be cut in half or the key should be hidden well under the dash.

BYPASS MODULES
556U UNIVERSAL TRANSPONDER BYPASS MODULE

CHRYSLER
457CW DODGE, CHRYSLER JEEP DATA INTERFACE
555C CHRYSLER DODGE JEEP TRANSPONDER BYPASS
556C 2004-UP CHRYSLER DODGE JEEP TRANSPONDER BYPASS

HONDA / ACURA
556H HONDA AND ACURA TRANSPONDER BYPASS MODULE

FORD
555P FORD PASSIVE ANTI-THEFT SYSTEM BYPASS MODULE
555S FORD SECURELOCK ANTI-THEFT SYSTEM BYPASS MODULE
556S FORD SECURELOCK ANIT-THEFT BYPASS MODULE

GENERAL MOTORS
CAN2 2005-UP GENERAL MOTORS CAN BUS DATA INTERFACE
457GW GM DATA BUS INTERFACE
555G GM PASSKEY III REMOTE START INTERFACE MODULE
555L DPASSLOCK BYPASS WITH LEARN ROUTINE

TOYOTA / LEXUS
555X TOYOTA AND LEXUS TRANSPONDER BYPASS MODULE

VOLKSWAGEN
CAN1 VOLKSWAGEN CAN BUS INTERFACE

REMOTE CONTROLS
SAA474U 4-BUTTON TRANSMITTER
SAA477U TWO-WAY TRANSMITTER WITH ICONS

SENSORS
507M ELECTRONIC TILT AND MOTION SENSOR
508D INVISIBEAM FIELD DISTURBANCE SENSOR
504D DOUBLE GUARD SHOCK SENSOR
506T GLASS BREAKAGE SENSOR

GENERAL ACCESSORIES
451M DOOR LOCK RELAY ASSEMBLY
515R BACK-UP BATTERY SIREN
528T ADJUSTABLE TIMER RELAY
529T 2-WINDOW ROLL-UP KIT
530T 2-WINDOW AUTOMATION KIT
8632 SUPER BRIGHT RED LED WITH PLUG
SAA998T PROSECURITY PROGRAMMER
SAA988U SOFTWARE UPGRADE FOR PROSECURITY PROGRAMMER

Remote Start Diagnostics

In the event that a remote start system fails to start, or stops running after a short period of time, you can retrieve the source of the shutdown from the UNGO ProSecurity system

1. Turn the Ignition off
2. Press and hold the Override switch
3. Turn the ignition on then off
4. Release the Override switch
5. Press and release the Override switch.

The LED will now report the last system shutdown by flashing one of the following patterns for a period of one minute.

LED Flashes	Shutdown Cause
One	System Timed Out
Two	Over-Rev Shutdown
Three	Low or no RPM
Four	Remote Shutdown or optional button
Six	+/- Shutdown
Seven	- Neutral safety shutdown
Eight	Wait-to-start timed out.

Remote Start Troubleshooting

The ignition comes on, but the starter will not crank

1. Does it start with the key in the ignition? If so, does the vehicle have a VATS Pass-Key system?
2. Will it start with the brake pedal depressed? (Make sure to disconnect the brake shutdown when performing this test.) If so, it may have a brake/ starter interlock.
3. Is the correct starter wire being energized? Check by energizing it yourself with a fused test lead.

The starter cranks for six seconds but does not start.

1. Either the wrong ignition wire is being energized, the unit's ignition and accessory wires have been connected backwards, or the vehicle has two ignition circuits. Try activating the unit with the ignition key in the "run" position. If the vehicle then runs normally, retest your ignition system.

The starter continues to crank even though the engine has started.

1. Has the tach wire been learned? See Tach Learning section of the installation guide.
2. Is the tach wire receiving the correct information? Either the wrong tach wire has been used, or a bad connection exists.

The climate control system does not work while the unit is operating the vehicle.

Either the wrong accessory wire is being energized or more than one ignition or accessory wire must be energized in order to operate the climate control system.

The remote start will not activate.

1. Check harnesses and connections. Make sure the harnesses are fully plugged into the remote start module. Make sure there are good connections to the vehicle wiring.
2. Check voltage and fuses. Use a meter and check for voltage between the red wire in the 5 pin ribbon harness and the black ground wire. If you have less than battery voltage, check both 30A fuses on the relay satellite. Also make sure that the ground wire is going to a chassis ground and not to something under the dash.
3. Check diagnostics. The diagnostics will tell you which shutdown is active or not connected.

The remote start will activate but the starter never engages.

1. Check for voltage on the purple starter wire two seconds after the remote start becomes active. If there is voltage present, skip to Step 4. If there is not voltage present, advance to Step 2.
2. Check the 30A fuses.
3. Check diagnostics. If the gray/black wire is detecting ground upon activation, the starter will not crank.
4. Make sure the purple starter wire is connected to the correct starter wire.
5. Does the vehicle have an immobilizer? Some immobilizer systems will not allow the vehicle to crank if active.
6. Check connections. The two red heavy gauge input wires on the relay satellite should have solid connections. "T-taps", or "scotch locks" are not

recommended for any high current heavy gauge wiring. Also, if the vehicle has more than one 12-volt input wire, then connect one red wire to each.

The vehicle starts, but immediately dies

1. Does the vehicle have an immobilizer? The vehicles immobilizer will cut the fuel and/or spark during unauthorized starting attempts.
2. Is the remote start programmed for voltage sense? If so, the start time may not be set high enough, or you may have to adjust the voltage threshold in programming. Voltage sense will not work on some vehicles.
3. Check diagnostics. Sometimes a shutdown will become active during cranking or just after cranking.

The vehicle starts, but the starter keeps running

1. Is the system programmed for engine checking off or voltage sense? When programmed for either of these features, the engine cranks for the preprogrammed crank time regardless of how long it takes to start the vehicle to actually start. Adjust to a lower cranking time.

2. Was the Tach Learn successful? The LED must light solidly and brightly to indicate a successful learn.

3. Make sure that there is a tach signal right at the purple/white tach input wire of the remote start. If not, recheck the connection to the vehicle's tach wire and make sure the wire is not broken or shorted to ground leading to the remote start.

The vehicle will start and run only for about 10 seconds

1. Is the remote start programmed for voltage sense? Try programming the unit for low voltage reference. If this does not work, a tach wire should be used.
2. Check diagnostics.

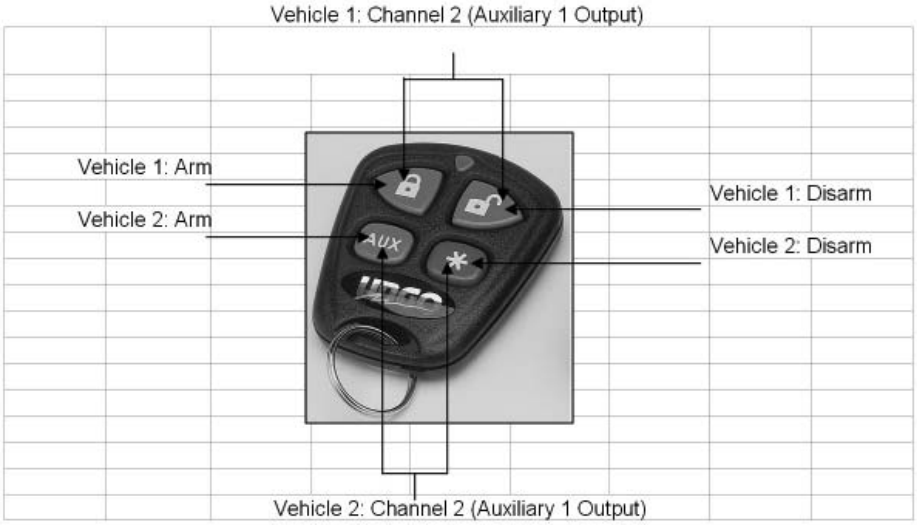
UNGO – Multiple Vehicle Operation

Technical Information: Multiple Vehicle Operation

Ungo ProSecurity remote transmitters are capable of operating multiple vehicles equipped with ProSecurity systems. This is beneficial for individuals with multiple vehicles and/or reducing the clutter on a key-chain.

1. Follow the remote programming procedure for the particular ProSecurity system and delete all the remote transmitters for both vehicles.
2. Follow the remote programming procedure for the particular ProSecurity system and program the desired function to the assigned button. Continue this process until all the button assignments have been complete on both vehicles.

EXAMPLE: S100 Multiple Vehicle Operation



Programming Vehicle 1.

1. Open the door of the Vehicle 1.
2. Turn the ignition ON
3. Press the Valet/Override button 9 times and then press it one more time and hold it in. The LED will flash 9 times indicating that selection.
4. Release the Valet/Override button and turn the ignition OFF and then back ON.
5. Press the Valet/Override button 4 times and then press it one more time and hold it in.
6. Press the LOCK button on each remote transmitter. The LED will flash 4 times indicating that selection.
7. Release the Valet/Override button and press it 1 time and then hold it in. The LED will flash 5 times indicating that selection.
8. Press the UNLOCK button on each remote transmitter. The LED will flash 5 times indicating that selection.
9. Release the Valet/Override button and turn the ignition OFF and then back ON.
10. Turn the ignition ON.
11. Press the Valet/Override button 2 times and then press it one more time and hold it in.
12. Press both the LOCK and UNLOCK buttons together on each remote transmitter. The LED will flash 2 times indicating that selection.
13. Release the Valet/Override button and turn the ignition OFF.

UNGO – Multiple Vehicle Operation

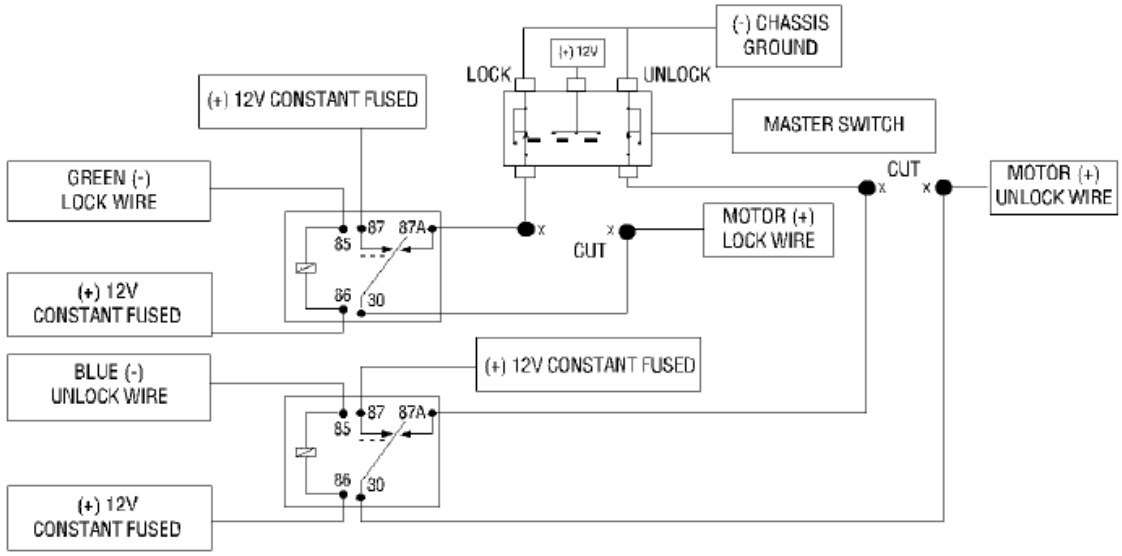
Vehicle 1:
LOCK: Arm (Lock)
UNLOCK: Disarm (Unlock)
LOCK & UNLOCK: Channel 2 (Auxiliary 1)

Programming Vehicle 2

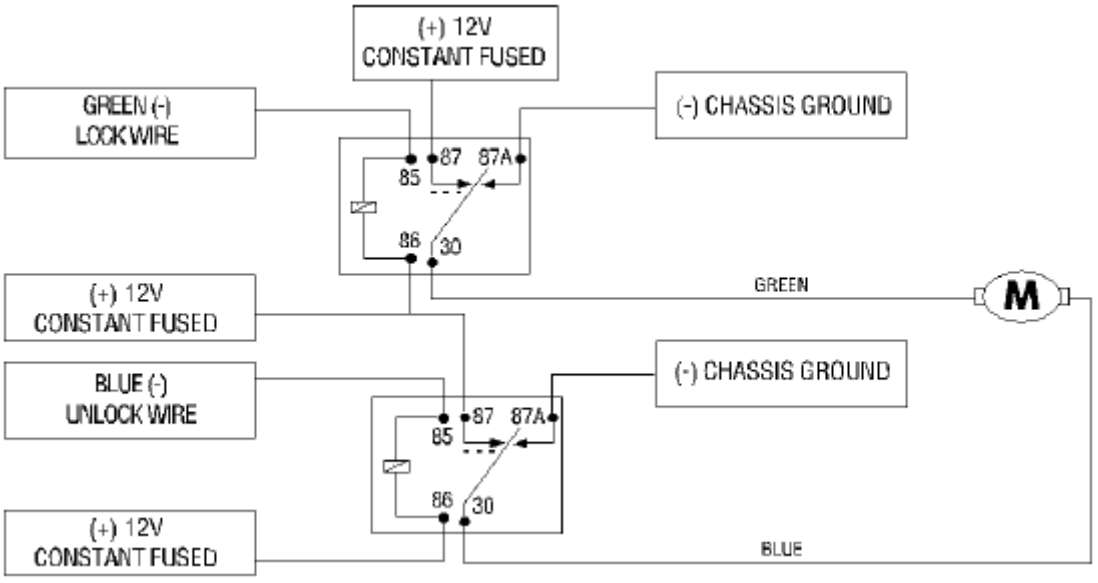
1. Open the door of the Vehicle 2.
2. Turn the ignition ON
3. Press the Valet/Override button 9 times and then press it one more time and hold it in. The LED will flash 9 times indicating that selection.
4. Release the Valet/Override button and turn the ignition OFF and then back ON.
5. Press the Valet/Override button 4 times and then press it one more time and hold it in.
6. Press the AUX button on each remote transmitter. The LED will flash 4 times indicating that selection.
7. Release the Valet/Override button and press it 1 time and then hold it in. The LED will flash 5 times indicating that selection.
8. Press the "*" button on each remote transmitter. The LED will flash 5 times indicating that selection.
9. Release the Valet/Override button and turn the ignition OFF and then back ON.
10. Turn the ignition ON.
11. Press the Valet/Override button 2 times and then press it one more time and hold it in.
12. Press both the AUX and "*" buttons together on each remote transmitter. The LED will flash 2 times indicating that selection.
13. Release the Valet/Override button and turn the ignition OFF.

Vehicle 2:
AUX: Arm (Lock)
"*": Disarm (Unlock)
AUX and "*": Channel 2 (Auxiliary 1)

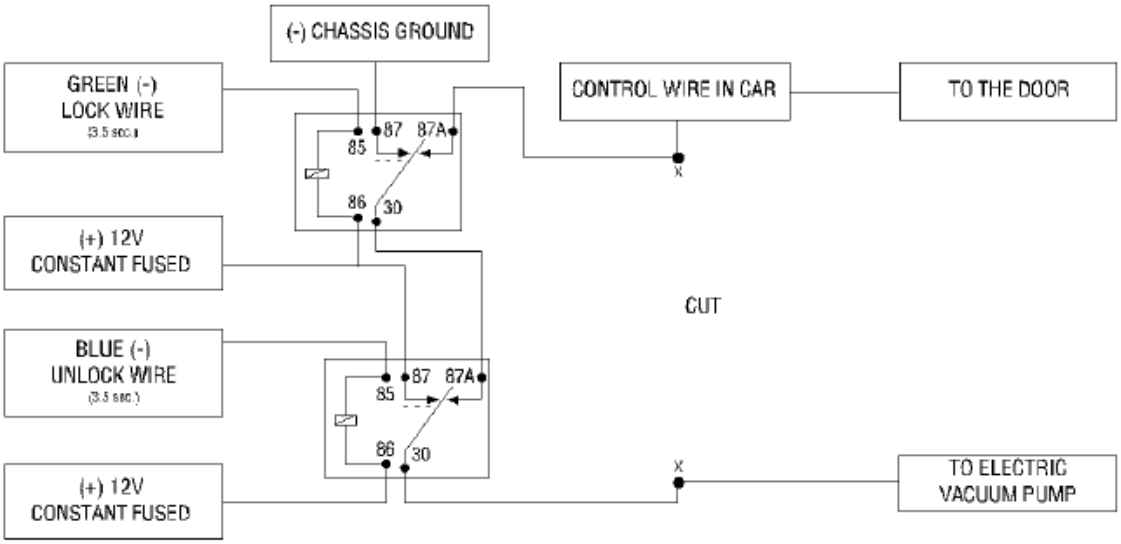
Reverse Polarity Door Lock Systems



Aftermarket Door Lock Actuators



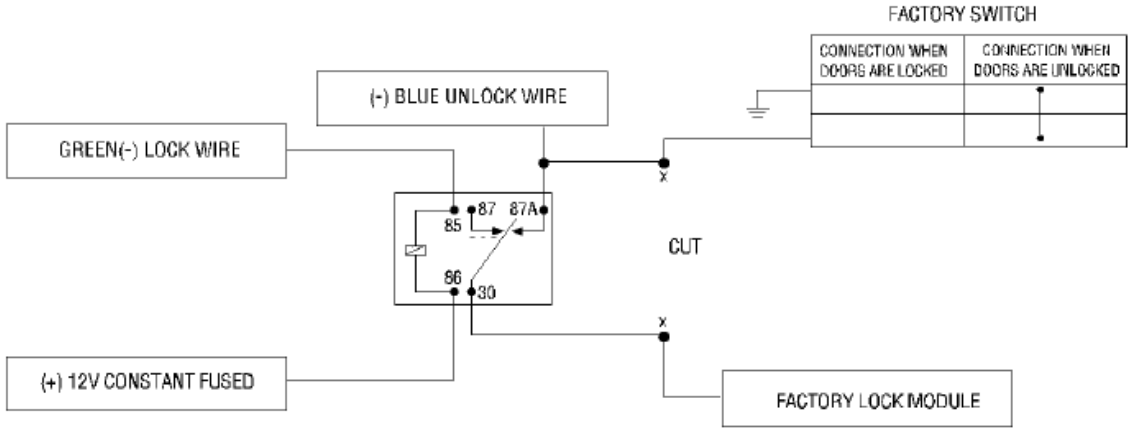
Vacuum Door Lock Systems



The lock pulse duration my be programmed to 3.5 seconds

One-Wire Door Lock System

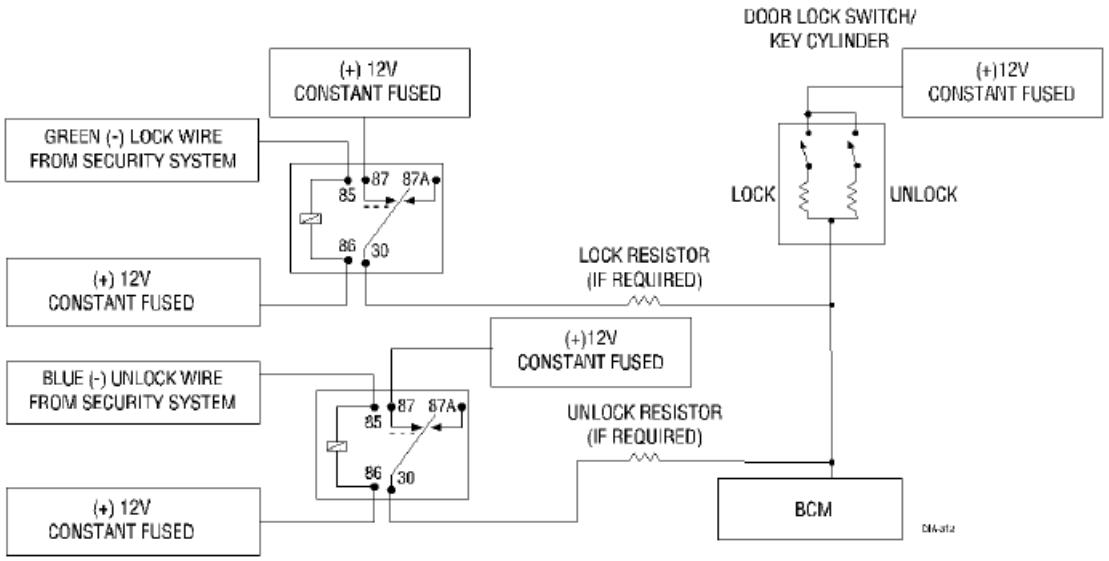
This door lock system requires a negative pulse to unlock the foors , and cutting the wire to lock the doors.



Multiplexed Door Lock Systems

Multiplexed door lock systems have more than one function on the same wire and require the use of different resistor values. It is necessary to use external relays any time a resistor is used.

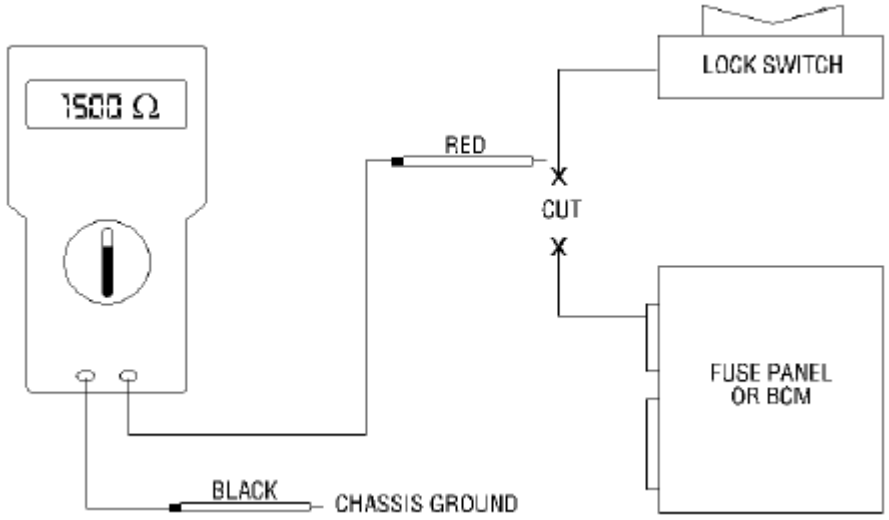
Positive Trigger Multiplexed Door Lock System



Test Procedure for Multiplexed Door Lock Systems:

1. Locate the Lock/Unlock wire in the vehicle.
2. Cut the wire in half and determine the polarity of the wire.
3. Using a digital multimeter, measure the resistance for Lock and Unlock. (See Diagram)

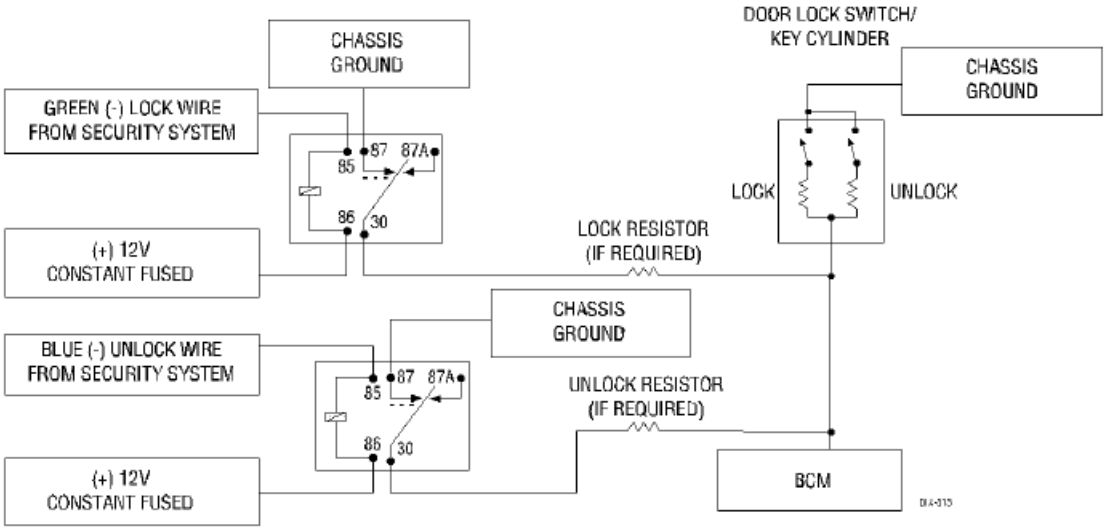
Test Configuration for Positive Door Lock Systems



Multiplexed Door Lock Systems

Multiplexed door lock systems have more than one function on the same wire and require the use of different resistor values. It is necessary to use external relays any time a resistor is used.

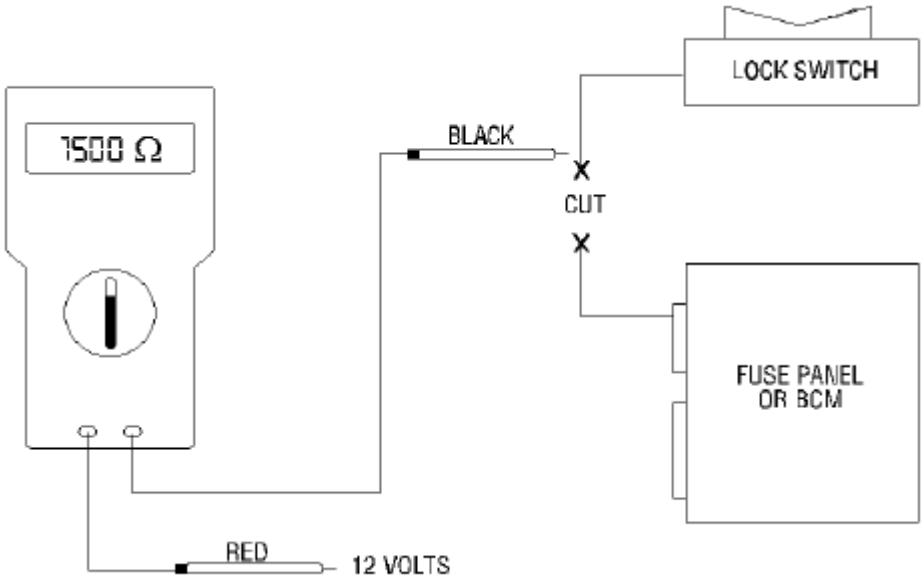
Negative **Trigger Multiplexed Door Lock System**



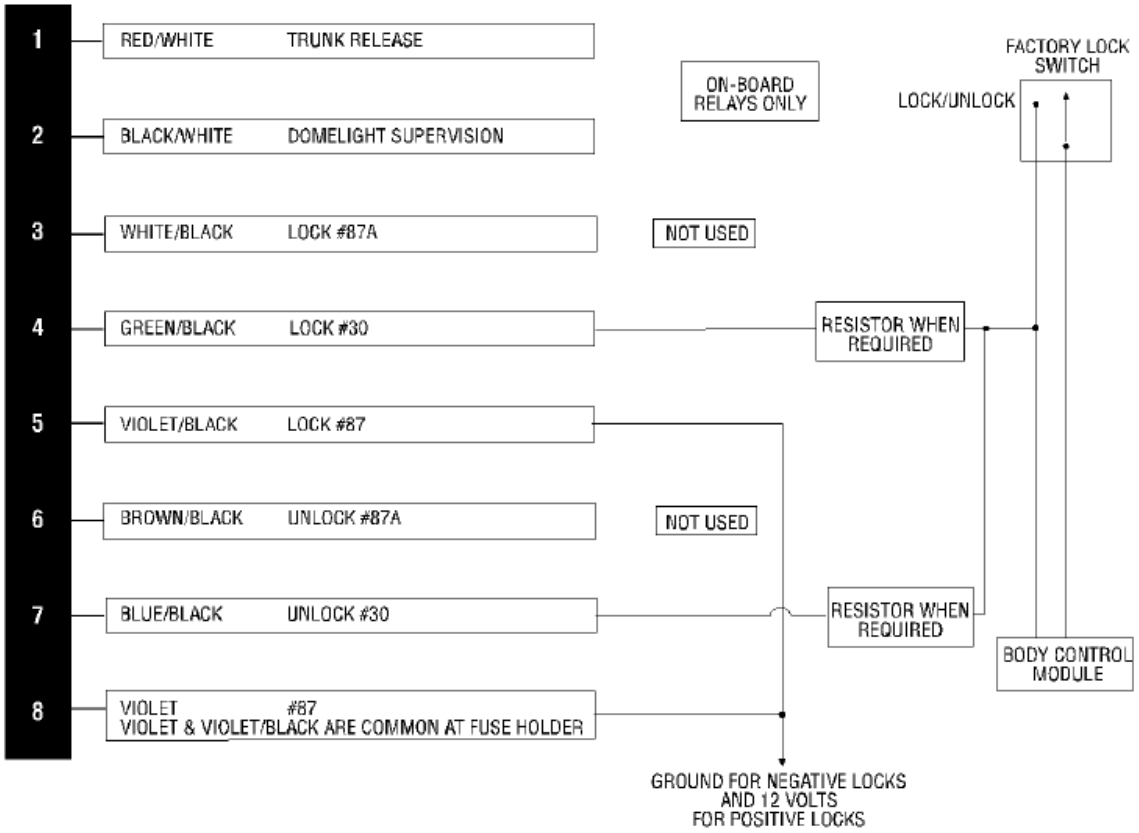
Test Procedure for Multiplexed Door Lock Systems:

1. Locate the Lock/Unlock wire in the vehicle.
2. Cut the wire in half and determine the polarity of the wire.
3. Using a digital multimeter, measure the resistance for Lock and Unlock. (See Diagram)

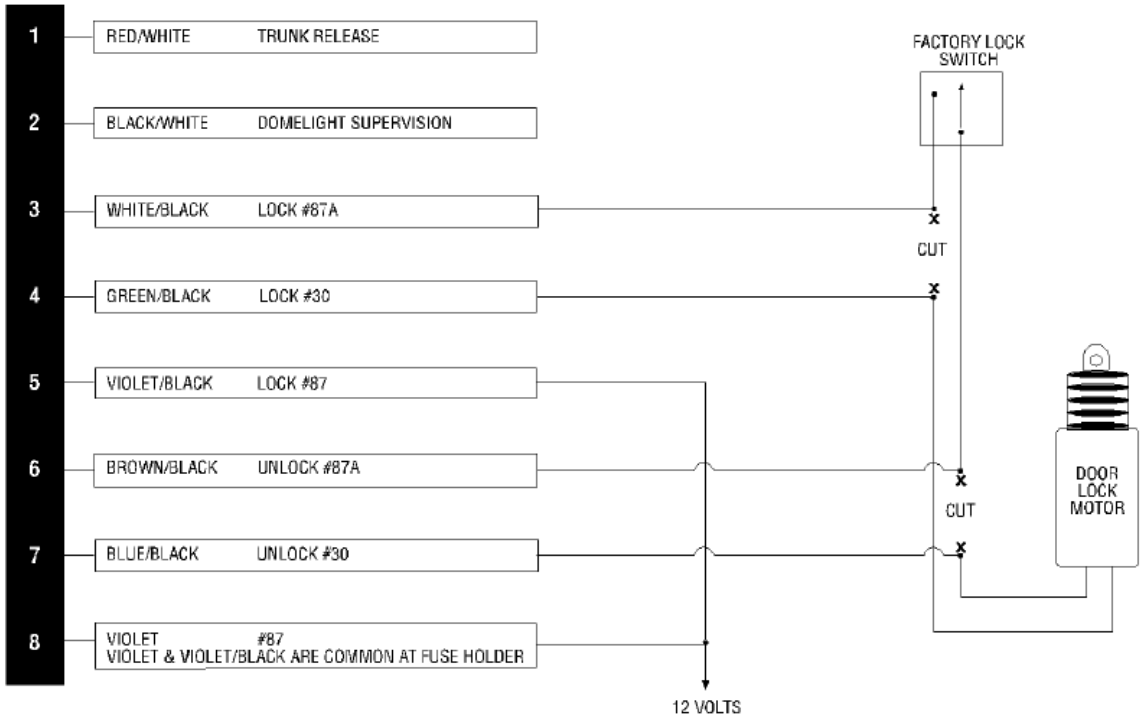
Test Configuration for Positive Door Lock Systems



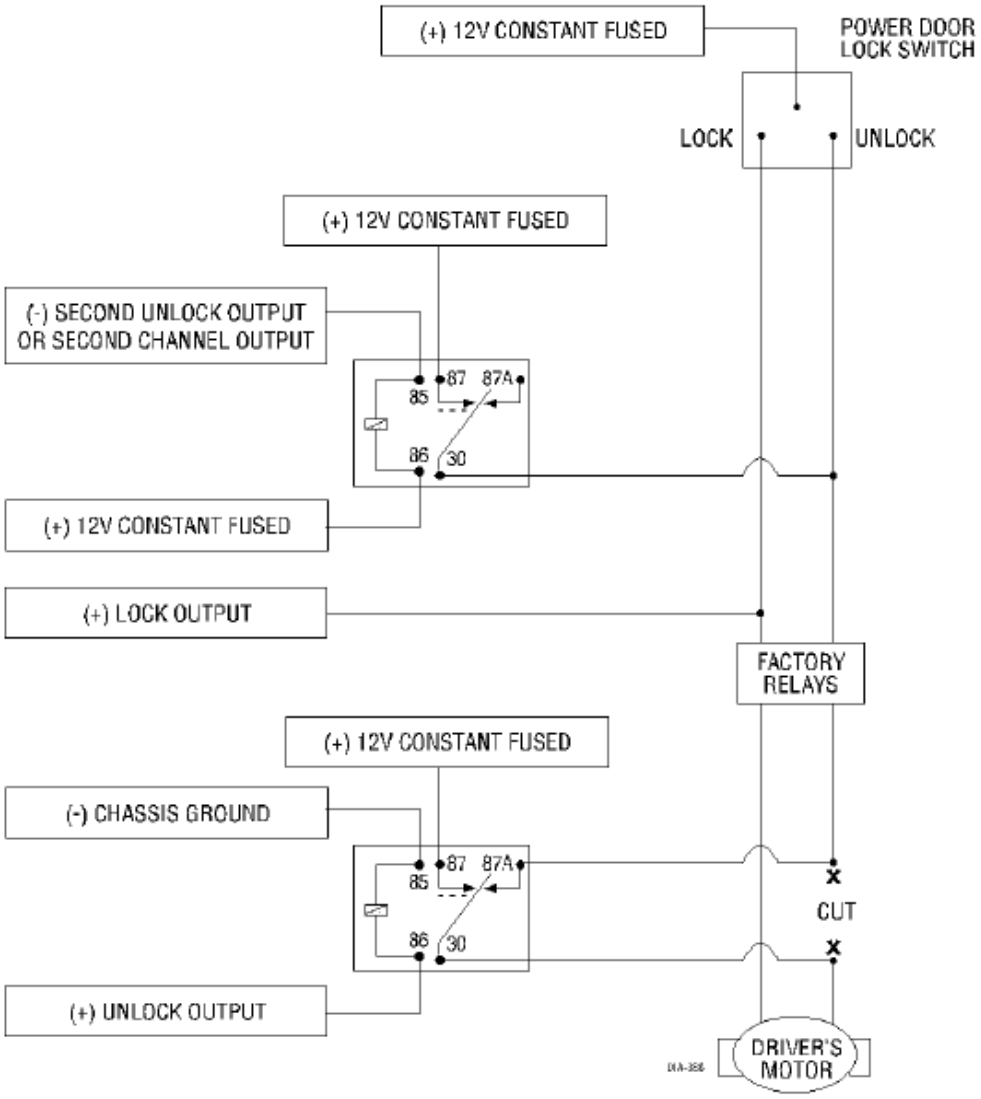
Multiplexed Door Lock Systems with On-Board Relays



Reverse Polarity Door Lock Systems with On-Board Relays:

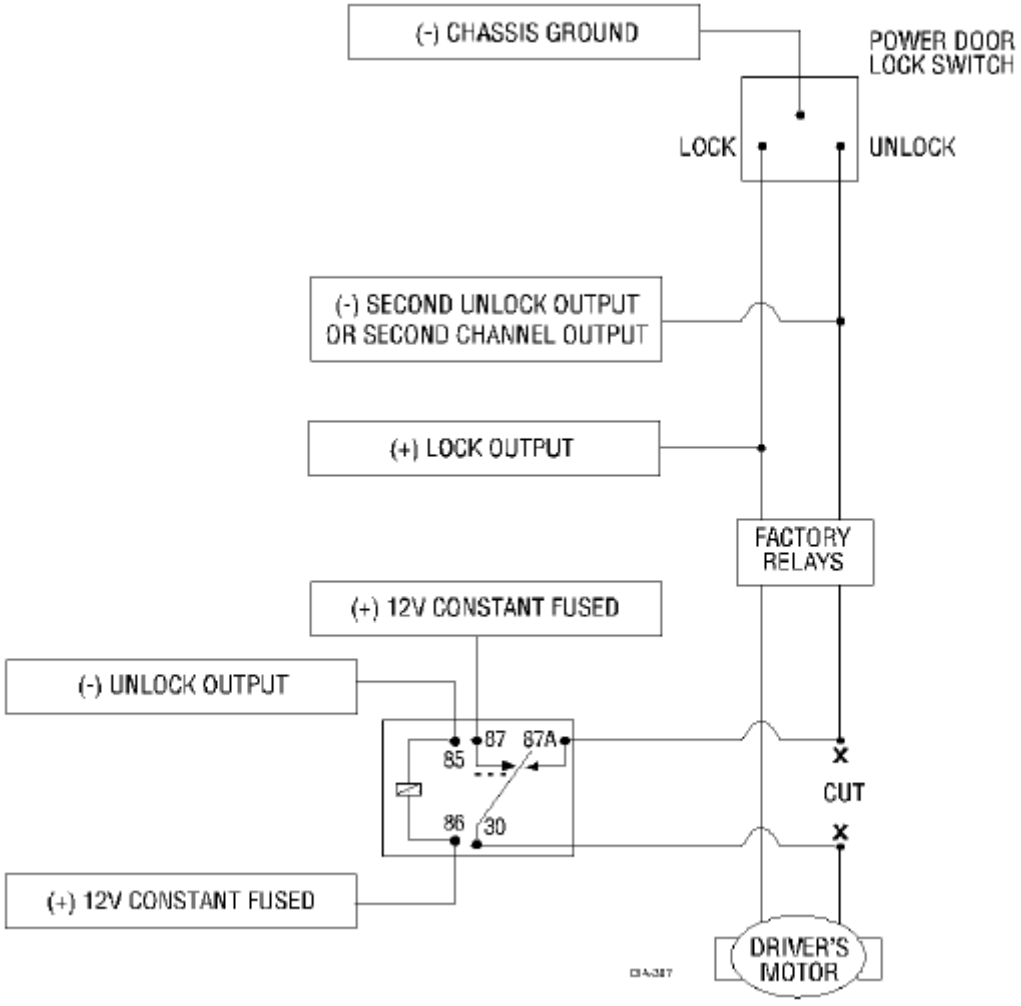


Progressive Door Lock Using Positive Door Lock Trigger



NOTE: *The second unlock output is a* ***(-)*** *output from the security/keyless entry system.*

Progressive Door Lock Using Negative Door Lock Trigger



NOTE: *The second unlock output is a* ***(-)*** *output from the security/keyless entry system.*

Technical Information Module Programming: Models: K10, K20, S670, RS10
System features can also be changed by using the ProSecurity Programmer

To enter the learn routine:

1. **Key.** Turn the ignition on and then back off.

2. **Choose.** Within 10 seconds, press and release the Override switch the number of times corresponding to the feature number you want to program. (See Feature Menus.) Once the Override switch has been pressed and released the desired number of times, press it once more and hold it. After a second, the LED will flash and the horn will honk to indicate which feature you have accessed.

3. **Transmit.** The transmitter is used to select the desired setting. As shipped, the unit is configured to the LED ON settings. These are the default settings. Pressing the lock button will set it to the LED ON setting. The LED will light solid (stop flashing) to indicate the setting. The horn will honk once (if connected). Pressing the unlock button will change the setting to the LED OFF setting. The LED will go out indicating the change and the horn will honk twice (if connected).

4. **Release.** The Override switch can now be released.

For example, to program the arming mode from active to passive, within 10 seconds of turning the ignition off, and press and release the Override switch once. Then press it again and hold it. The LED will flash in groups of one and the horn will honk once (if connected). While holding the Override switch, press the unlock button. The LED will stop flashing and go out. The horn will honk twice if connected. Passive arming is now programmed. If that was not the desired setting, without releasing the Override switch, press the lock button. The LED will light solid and the horn will honk once if connected. Active arming is now programmed. Release the Override switch after the selection has been made.

You can advance from feature to feature by pressing and releasing the Override switch the number of times necessary to get from the feature you just programmed to the feature you wish to access. For example, if you just programmed Feature 2 and you next want to program Feature 3 to off, release the Override switch. Press and release it once to advance from Feature 2 to Feature 3. Then press it once more and hold it. The LED will flash in groups of three and the horn will honk three times (if connected) to confirm that you have accessed Feature 3.

K10 (Keyless Entry)

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1	**Active Arming**	Passive Arming
2	**Chirps ON**	Chirps OFF
3	**Ignition Control Door Lock ON**	Ignition Control Door Lock OFF
4	**Ignition Control Door Unlock ON**	Ignition Control Door Unlock OFF
5	**Active Locking**	Passive Locking
6	**Ignition Control Dome Light ON**	Ignition Control Dome Light OFF
7	**0.8 Second Door Lock Pulse**	3.5 Second Door Lock Pulse
8	**Double Pulse Unlock OFF**	Double Pulse Unlock ON
9	**Security Features ON**	Security Features OFF
10	**Code Hopping ON**	Code Hopping OFF

Note: Factory default settings are shown **BOLD.**

K20 (Keyless Entry with On-Board Relays)

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1	**Ignition Control Door Lock ON**	Ignition Control Door Lock OFF
2	**Ignition Control Door Unlock ON**	Ignition Control Door Unlock OFF
3	**Ignition Control Dome Light ON**	Ignition Control Dome Light OFF
4	**0.8 Second Door Lock Pulse**	3.5 Second Door Lock Pulse / 0.4 sec.
5	**Double Pulse Unlock OFF**	Double Pulse Unlock ON
6	**Double Pulse Lock OFF**	Double Pulse Lock ON
7	**Comfort Closure OFF**	Comfort Closure ON
8	**Code Hopping ON**	Code Hopping OFF

Note: Factory default settings are shown **BOLD.**

Note: For feature 1-4, the 3.5 second door lock pulse setting the siren (or horn) chirps twice, for the 0.4 second door lock pulse setting for the siren (or horn) chirps three times

S670 (2-Way Security with Keyless Entry)

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1-1	**Active Arming**	Passive Arming
1-2	**Chirps ON**	Chirps OFF
1-3	**Ignition Control Door Locks ON**	Ignition Control Door Locks OFF
1-4	**Active Locking**	Passive Locking
1-5	**Door Lock Pulse Duration 0.8 Seconds**	Door Lock Pulse Duration 3.5 Seconds
1-6	**Single Unlock Pulse**	Double Unlock Pulse
1-7	**Anti-Code Grabbing ON**	Anti-Code Grabbing OFF
1-8	**Open Zone Bypass Notice ON**	Open Zone Bypass Notice OFF
1-9	**Single Unlock Pulse**	Double Unlock Pulse
1-10	Comfort Closure ON	**OFF**

Note: Factory default settings are shown **BOLD.**

RS10 (Remote Start with Keyless Entry)

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1	**Engine Check ON**	Engine Checking OFF
2	**Tachometer Sensing**	Voltage Sensing
3	**12 Minute Run Time (1)***	24 Min (2)*, 60 Min Run Time (3)*
4	**Flashing Parking Light Output**	Constant Parking Light Output
5	**Cranking Time 0.6 Sec. (1)***	Crank Time 0.8 (2)*, 1.0 (3)*, 1.2 (4)*, 1.4 (5)*, 1.6 (6)*, 1.8 (7)*, 2.0 (8)*, 4.0 (9)*
6	**Voltage Check Level High**	Voltage Check Level Low
7	**Short Run (Turbo Timer): 1 Min. (1)***	Short Run (Turbo Timer): 3 (2)*, 5 (3)*, 10 (4)*
8	Activation Pulse: 1 (1)*	**Activation Pulses: 2 (2)***, 3 (3)*
9	**Ignition/Accessory Output: Ignition**	Ignition/Accessory Output: Accessory
10	**Accessory State During Wait to Start: OFF**	Accessory State During Wait to Start: ON
11	**2nd Status Output: Normal (1)***	Rear Defogger Latched (2)*, Pulsed (3)*
12	**Diesel Time Wait-to-Start Input (1)***	Timed 15 (2)*, 30 (3)*, 45 (4)* Seconds
13	**Run Time (Timer Mode) 12 Minutes (1)***	3 (2)*, 6 (3)*, 9 (4)* Minutes
14	**Door Lock Pulse Duration 0.8 Sec. (1)***	3.5 (2)*, 0.4 (3)* Seconds
15	**Unlock Output 1 Pulse**	Unlock Output 2 Pulses
16	**Lock Output 1 Pulse**	Lock Output 2 Pulses
17	**Ignition Unlock ON**	Ignition Unlock OFF
18	**Ignition Lock ON**	Ignition Lock ON
19	**Factory Alarm Disarm Function with Unlock**	Before Lock (2)*, Remote Start Only (3)*
20	**Factory Alarm Disarm 1 Pulse**	2 Pulse
21	Comfort Closure ON	**OFF**

Note: Factory default settings are shown **BOLD.**

Note: ******* The number in parentheses indicate the number of times the LED will flash.

UNGO – Programming Guide

Technical Information Module Programming: Models: S100, S400, S660, SR1000, SR5000, SR6000
System features can also be changed by using the ProSecurity Programmer

To program the features using the Valet switch:

1. Open a door. (The GREEN wire, H1/5, or the VIOLET, H1/7 must be connected.)

2. Key. Turn the ignition on and then back off.

3. Select Menu. Press and HOLD the Valet®/Program switch. When the LED flashes once and the siren chirps, Menu One has been selected. Continue to hold the switch until the LED flashes twice and the siren chirps twice, Menu Two has now been selected. Continue to hold the switch until the LED flashes three times and the siren chirps three times, Menu Three has now been selected. Release the switch after the Menu choice has been selected.

4. Choose. Within 10 seconds, press and release the Valet®/Program switch the number of times corresponding to the feature number you want to program and then press and hold the switch. (See *Feature Menus*.)

After a second, the LED will flash to indicate which feature you have accessed. For example, in Menu Two, groups of eight flashes would indicate access to the activation pulse setting (Feature 2-8). The horn will also honk eight times (if connected).

5. Transmit. The transmitter is used to select the desired setting. Pressing will change the feature to the LED ON setting (or will flash once for features with more than 2 settings). The sire will chirp once (if connected). Pressing will change the setting to the LED OFF setting (or will flash two or more times for features with more than 2 settings).

6. Release. The Valet®/Program switch can now be released.

You can advance from feature to feature by pressing and releasing the Valet®/Program switch the number of times necessary to get from the feature you just programmed to the feature you wish to access. For example, in Menu One, if you just programmed Feature 1-2 and you next want to program Feature 1-3 to off, release the Valet/Program switch. Press and release it once to advance from Feature 1-2 to Feature 1-3. Then press it once more and HOLD it. The LED will flash in groups of 3 and the horn will honk 3 times (if connected) to confirm that you have accessed Feature 1-3.

S100 and S400 (Security with Keyless Entry)

MENU 1

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1-1	**Active Arming**	Passive Arming
1-2	**Chirps ON**	Chirps OFF
1-3	**Ignition Control Door Locks ON**	Ignition Control Door Locks OFF
1-4	**Active Locking**	Passive Locking
1-5	**Panic with Ignition ON**	Panic with Ignition OFF
1-6	**Door Lock Pulse Duration 0.8 Seconds**	Door Lock Pulse Duration 3.5 Seconds
1-7	**Forced Passive Arming ON**	Forced Passive Arming OFF
1-8	Automatic Engine Disable ON	**Automatic Engine Disable OFF**
1-9	**Armed When Driving**	Anti-Carjacking System
1-10	**Anti-Code Grabbing ON**	Anti-Code Grabbing OFF

MENU 2

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
2-1	**Siren Output Constant**	Siren Output Pulsed
2-2	**30-Second Siren Duration**	60-Second Siren Duration
2-3	**False Alarm Prevention Circuitry ON**	False Alarm Prevention Circuitry OFF
2-4	**Progressive Door Trigger**	Instant Door Trigger
2-5	**Override Switch Input: 1 Pulse (1)***	Override Switch Input: 2 (2)*, 3 (3)*, 4 (4)*, 5 (5)*
2-6	**Open Zone Bypass Notice ON**	Open Zone Bypass Notice OFF
2-7	**Ignition Controlled Dome Light ON**	Ignition Controlled Dome Light OFF
2-8	**Single Unlock Pulse**	Double Unlock Pulse
2-9	**Channel 3: Validity (1)***	Channel 3: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, Second Unlock Output (5)*

Note: Factory default settings are shown **BOLD.**
Note: ***** The number in parentheses indicate the number of times the LED will flash.

S660 (2-Way Security with Keyless Entry)

MENU 1

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1-1	**Active Arming**	Passive Arming
1-2	**Chirps ON**	Chirps OFF
1-3	**Ignition Control Door Locks ON**	Ignition Control Door Locks OFF
1-4	**Ignition Unlock ON**	Ignition Unlock OFF
1-5	**Active Locking**	Passive Locking
1-6	**Panic with Ignition ON**	Panic with Ignition OFF
1-7	**Door Lock Pulse Duration 0.8 Seconds**	Door Lock Pulse Duration 3.5 Seconds
1-8	**Forced Passive Arming ON**	Forced Passive Arming OFF
1-9	Automatic Engine Disable ON	**Automatic Engine Disable OFF**
1-10	**Armed When Driving ON**	Armed When Driving OFF
1-11	**Anti-Code Grabbing ON**	Anti-Code Grabbing OFF

MENU 2

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
2-1	**Siren Output Constant**	Siren Output Pulsed
2-2	**30-Second Siren Duration**	60-Second Siren Duration
2-3	**False Alarm Prevention Circuitry ON**	False Alarm Prevention Circuitry OFF
2-4	**Progressive Door Trigger**	Instant Door Trigger
2-5	**Override Switch Input: 1 Pulse (1)***	Override Switch Input: 2 (2)*, 3 (3)*, 4 (4)*, 5 (5)*
2-6	**Open Zone Bypass Notice ON**	Open Zone Bypass Notice OFF
2-7	**Ignition Controlled Dome Light ON**	Ignition Controlled Dome Light OFF
2-8	**Single Unlock Pulse**	Double Unlock Pulse
2-9	**FAD with Channel 2 ON**	FAD with Channel 2 OFF
2-10	**Channel 4: Validity (1)***	Channel 4: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, 60-Second Timed (5)*, 90-Second Timed (6)*
2-11	**Channel 5: Validity (1)***	Channel 5: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, 60-Second Timed (5)*, 90-Second Timed (6)*

Note: Factory default settings are shown **BOLD.**
Note: * The number in parentheses indicate the number of times the LED will flash.

SR1000 (Remote Start with Security Combo)

MENU 1

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1-1	**Active Arming**	Passive Arming
1-2	**Chirps ON**	Chirps OFF
1-3	**Ignition Control Door Locks ON**	Ignition Control Door Locks OFF
1-4	**Ignition Unlock ON**	Ignition Unlock OFF
1-5	**Active Locking**	Passive Locking
1-6	**Panic with Ignition ON**	Panic with Ignition OFF
1-7	**Door Lock Pulse Duration 0.8 Seconds**	Door Lock Pulse Duration 3.5 Seconds
1-8	**Forced Passive Arming ON**	Forced Passive Arming OFF
1-9	Automatic Engine Disable ON	**Automatic Engine Disable OFF**
1-10	**Armed When Driving ON**	Armed When Driving OFF
1-11	**Anti-Code Grabbing ON**	Anti-Code Grabbing OFF

MENU 2

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
2-1	**Siren Output Constant**	Siren Output Pulsed
2-2	**30-Second Siren Duration**	60-Second Siren Duration
2-3	**False Alarm Prevention Circuitry ON**	False Alarm Prevention Circuitry OFF
2-4	**Progressive Door Trigger**	Instant Door Trigger
2-5	**Override Switch Input: 1 Pulse (1)***	Override Switch Input: 2 (2)*, 3 (3)*, 4 (4)*, 5 (5)*
2-6	**Open Zone Bypass Notice ON**	Open Zone Bypass Notice OFF
2-7	**Ignition Controlled Dome Light ON**	Ignition Controlled Dome Light OFF
2-8	**Single Unlock Pulse**	Double Unlock Pulse
2-9	**FAD with Channel 2 ON**	FAD with Channel 2 OFF
2-10	**Channel 4: Validity (1)***	Channel 4: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, 60-Second Timed (5)*, 90-Second Timed (6)*
2-11	**Channel 5: Validity (1)***	Channel 5: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, 60-Second Timed (5)*, 90-Second Timed (6)*

MENU 3

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
3-1	**Engine Check ON**	Engine Checking OFF
3-2	**Tachometer Sensing**	Voltage Sensing
3-3	**12 Minute Run Time (1)***	24 Min (2)*, 60 Min Run Time (3)*
3-4	**Flashing Parking Light Output**	Constant Parking Light Output
3-5	**Cranking Time 0.6 Sec. (1)***	Crank Time 0.8 (2)*, 1.0 (3)*, 1.2 (4)*, 1.4 (5)*, 1.6 (6)*, 1.8 (7)*, 2.0 (8)*, 4.0 (9)*
3-6	**Voltage Check Level High**	Voltage Check Level Low
3-7	**Short Run (Turbo Timer): 1 Min. (1)***	Short Run (Turbo Timer): 3 (2)*, 5 (3)*, 10 (4)*
3-8	Activation Pulse: 1 (1)*	**Activation Pulses: 2 (2)***, 3 (3)*
3-9	**2nd Ignition Output**	2nd Accessory Output
3-10	**Accessory State During Wait to Start: OFF**	Accessory State During Wait to Start: ON
3-11	**2nd Status Output: Normal (1)***	Rear Defogger Latched (2)*, Pulsed (3)*
3-12	**Anti-Grind ON**	Anti-Grind OFF

Note: Factory default settings are shown **BOLD.**

***Note:* *** The number in parentheses indicate the number of times the LED will flash.

SR5000 (2-Way Remote Start with Security Combo)

MENU 1

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1-1	**Active Arming**	Passive Arming
1-2	**Chirps ON**	Chirps OFF
1-3	**Ignition Control Door Locks ON**	Ignition Control Door Locks OFF
1-4	**Active Locking**	Passive Locking
1-5	**Panic with Ignition ON**	Panic with Ignition OFF
1-6	**Door Lock Pulse Duration 0.8 Seconds**	Door Lock Pulse Duration 3.5 Seconds
1-7	**Forced Passive Arming ON**	Forced Passive Arming OFF
1-8	Automatic Engine Disable ON	**Automatic Engine Disable OFF**
1-9	**Armed When Driving**	Anti-Carjacking System
1-10	**Anti-Code Grabbing ON**	Anti-Code Grabbing OFF

MENU 2

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
2-1	**Siren Output Constant**	Siren Output Pulsed
2-2	**30-Second Siren Duration**	60-Second Siren Duration
2-3	**False Alarm Prevention Circuitry ON**	False Alarm Prevention Circuitry OFF
2-4	**Progressive Door Trigger**	Instant Door Trigger
2-5	**Override Switch Input: 1 Pulse (1)***	Override Switch Input: 2 (2)*, 3 (3)*, 4 (4)*, 5 (5)*
2-6	**Open Zone Bypass Notice ON**	Open Zone Bypass Notice OFF
2-7	**Ignition Controlled Dome Light ON**	Ignition Controlled Dome Light OFF
2-8	**Single Unlock Pulse**	Double Unlock Pulse
2-9	**FAD with Channel 2 ON**	FAD with Channel 2 OFF
2-10	**Channel 4: Validity (1)***	Channel 4: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, 60-Second Timed (5)*, 90-Second Timed (6)*

MENU 3

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
3-1	**Engine Check ON**	Engine Checking OFF
3-2	**Tachometer Sensing**	Voltage Sensing
3-3	**12 Minute Run Time (1)***	24 Min (2)*, 60 Min Run Time (3)*
3-4	**Flashing Parking Light Output**	Constant Parking Light Output
3-5	**Cranking Time 0.6 Sec. (1)***	Crank Time 0.8 (2)*, 1.0 (3)*, 1.2 (4)*, 1.4 (5)*, 1.6 (6)*, 1.8 (7)*, 2.0 (8)*, 4.0 (9)*
3-6	**Voltage Check Level High**	Voltage Check Level Low
3-7	**Auxiliary Output: Factory Alarm Disarm**	Special Accessory
3-8	**Status Output**	Factory Alarm Rearm
3-9	**Anti-Grind ON**	Anti-Grind OFF

Note: Factory default settings are shown **BOLD.**

Note: * The number in parentheses indicate the number of times the LED will flash.

SR6000 (2-Way Remote Start with Security Combo)

MENU 1

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1-1	**Active Mode**	Passive Mode
1-2	**Chirps ON**	Chirps OFF
1-3	**Ignition Lock ON**	Ignition Lock OFF
1-4	**Ignition Unlock ON**	Ignition Unlock OFF
1-5	**Active Locking**	Passive Locking
1-6	**Panic with Ignition ON**	Panic with Ignition OFF
1-7	**Door Lock Pulse Duration 0.8 Seconds**	Door Lock Pulse Duration 3.5 Seconds
1-8	**Forced Passive Arming ON**	Forced Passive Arming OFF
1-9	Automatic Engine Disable ON	**Automatic Engine Disable OFF**
1-10	**Armed When Driving**	Anti-Carjacking System
1-11	**Anti-Code Grabbing ON**	Anti-Code Grabbing OFF

MENU 2

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
2-1	**Siren Output Constant**	Siren Output Pulsed
2-2	**30-Second Siren Duration**	60-Second Siren Duration
2-3	**False Alarm Prevention Circuitry ON**	False Alarm Prevention Circuitry OFF
2-4	**Progressive Door Trigger**	Instant Door Trigger
2-5	**Override Switch Input: 1 Pulse (1)***	Override Switch Input: 2 (2)*, 3 (3)*, 4 (4)*, 5 (5)*
2-6	**Open Zone Bypass Notice ON**	Open Zone Bypass Notice OFF
2-7	**Ignition Controlled Dome Light ON**	Ignition Controlled Dome Light OFF
2-8	**Single Unlock Pulse**	Double Unlock Pulse
2-9	**FAD with Channel 2 ON**	FAD with Channel 2 OFF
2-10	**Channel 4: Validity (1)***	Channel 4: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, 60-Second Timed (5)*, 90-Second Timed (6)*
2-11	**Channel 5: Validity (1)***	Channel 5: Latched/Latched (2)*, Reset with Ignition (3)*, 30-Second Timed (4)*, 60-Second Timed (5)*, 90-Second Timed (6)*

MENU 3

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
3-1	**Engine Check ON**	Engine Checking OFF
3-2	**Tachometer Sensing**	Voltage Sensing
3-3	**12 Minute Run Time (1)***	24 Min (2)*, 60 Min Run Time (3)*
3-4	**Flashing Parking Light Output**	Constant Parking Light Output
3-5	**Cranking Time 0.6 Sec. (1)***	Crank Time 0.8 (2)*, 1.0 (3)*, 1.2 (4)*, 1.4 (5)*, 1.6 (6)*, 1.8 (7)*, 2.0 (8)*, 4.0 (9)*
3-6	**Voltage Check Level High**	Voltage Check Level Low
3-7	**Short Run (Turbo Timer): 1 Min. (1)***	Short Run (Turbo Timer): 3 (2)*, 5 (3)*, 10 (4)*
3-8	Activation Pulse: 1 (1)*	**Activation Pulses: 2 (2)***, 3 (3)*
3-9	**2nd Ignition Output**	2nd Accessory Output
3-10	**Accessory State During Wait to Start: OFF**	Accessory State During Wait to Start: ON
3-11	**2nd Status Output: Normal (1)***	Rear Defogger Latched (2)*, Pulsed (3)*
3-12	**Anti-Grind ON**	Anti-Grind OFF

Note: Factory default settings are shown **BOLD.**

Note: * The number in parentheses indicate the number of times the LED will flash.

RK1 (Advanced Remote Start with Keyless Entry)

MENU 1

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
1-1	**Active Mode**	Passive Mode
1-2	**Chirps ON**	Chirps OFF
1-3	**Ignition Lock ON**	Ignition Lock OFF
1-4	**Ignition Unlock ON**	Ignition Unlock OFF
1-5	**Active Locking**	Passive Locking
1-6	**Panic with Ignition ON**	Panic with Ignition OFF
1-7	**Door Lock Pulse Duration 0.8 Seconds**	Door Lock Pulse Duration 3.5 Seconds
1-8	**Double Unlock Pulse OFF**	Double Unlock Pulse ON
1-9	**Channel 2 Delayed Validity (1)***	Channel 2 Latched (2)*, Latched Reset with Ignition (3)*, 30 Second Timed (4)*
1-10	**FAD with Channel 2 ON**	FAD with Channel 2 OFF
1-11	**Security Features ON**	Security Features OFF (Starter Kill)
1-12	**Code Hopping ON**	Code Hopping OFF
1-13	**Channel 4 Validity (1)***	Latched (2)*, Latched Reset with Ignition (3)*, 30-Second Timed (4)*

MENU 2

Feature Number	Default LED ON (Press Channel 1)	LED OFF Setting (Press Channel 2)
2-1	**Engine Check ON**	Engine Checking OFF
2-2	**Tachometer Sensing**	Voltage Sensing
2-3	**12 Minute Run Time (1)***	24 Min (2)*, 60 Min Run Time (3)*
2-4	**Flashing Parking Light Output**	Constant Parking Light Output
2-5	**Cranking Time 0.6 Sec. (1)***	Crank Time 0.8 (2)*, 1.0 (3)*, 1.2 (4)*, 1.4 (5)*, 1.6 (6)*, 1.8 (7)*, 2.0 (8)*, 4.0 (9)*
2-6	**Voltage Check Level High**	Voltage Check Level Low
2-7	**Short Run (Turbo Timer): 1 Min. (1)***	Short Run (Turbo Timer): 3 (2)*, 5 (3)*, 10 (4)*
2-8	Activation Pulse: 1 (1)*	**Activation Pulses: 2 (2)***, 3 (3)*
2-9	**2nd Ignition Output**	2nd Accessory Output
2-10	**Accessory State During Wait to Start: OFF**	Accessory State During Wait to Start: ON
2-11	**2nd Status Output: Normal (1)***	Rear Defogger Latched (2)*, Pulsed (3)*
2-12	**Anti-Grind ON**	Anti-Grind OFF

Note: Factory default settings are shown **BOLD.**

Note: ***** The number in parentheses indicate the number of times the LED will flash.

Remote Programming

1. Open a door. (The GREEN wire, H1/5, or the VIOLET, H1/7 must be connected.)

2. Key. Turn the ignition to the ON position.

3. Choose. Within 10 seconds, press and release the Program switch the number of times corresponding to the desired channel listed below. Once you have selected the channel, press the switch once more and HOLD it. The LED will flash and the horn will honk (if connected) to confirm the selected channel. Do not release the Program switch.

4. Transmit. While HOLDING the Valet/Program switch, press the button on the transmitter that you would like to control the selected receiver channel. The unit will chirp to confirm that the code has been successfully programmed. It is not possible to teach a transmitter button to the system more than once.

5. Release. Once the code is learned, the Valet/Program switch can be released.

UNGO – Remote Programming

K10, S100, S400

Channel Number	Function	Wire Color
1	Arm/Disarm/Panic	
2	Silent Mode / Channel 2 Output	Red/White
3	Channel 3 Output	White/Blue
4	Arm Only	
5	Disarm Only	
6	Panic Only	
7	Auto-Learn Single Button Arm/Disarm Configuration	
8	Auto-Learn Standard Configuration	
9	Delete All Remotes	

K20

Channel Number	Function	Wire Color
1	Auto-Learn Standard Configuration	
2	Arm Only	
3	Disarm Only	
4	Silent Mode / Channel 2 Output	Red/White
5	Channel 3 Output	White/Blue
6	Arm/Disarm/Panic	
7	Panic Only	
8	Delete All Remotes	

RS10

Channel Number	Function	Wire Color
1	Auto-Learn	
2	Lock/Unlock	
3	Channel 2 Output	Red/White
4	Remote Start	
5	Turbo Timer / Short Run	
6	Turbo Timer / Short Run	
7	Rear Window Defogger Control	
8	Delete All Remotes	

S660

Channel Number	Function	Wire Color
1	Auto-Learn Standard Configuration	
2	Arm Only	
3	Disarm Only	
4	Silent Mode / Channel 2 Output	Red/White
5	*No Function*	
6	Channel 4	Violet/Black
7	Channel 5	White/Black
8	*No Function*	
9	*No Function*	
10	Arm/Disarm/Panic	
11	Panic Only	
12	Delete All Remotes	

S670

Channel Number	Function	Wire Color
1	Arm/Disarm/Panic	
2	Silent Mode / Channel 2 Output	Red/White
3	Channel 3	White/Blue
4	Channel 4	Violet/Black
5	Arm Only	
6	Disarm Only	
7	Panic Only	
8	Auto-Learn (4-Button and LCD 2-Way Remotes)	
9	Auto-Learn (3 Button Optional Remotes)	
10	Delete All Remotes	

SR1000, SR6000

Channel Number	Function	Wire Color
1	Auto-Learn Standard Configuration	
2	Arm Only	
3	Disarm Only	
4	Silent Mode / Channel 2 Output	Red/White
5	Remote Start	
6	Channel 4	Violet/Black
7	Channel 5	White/Black
8	Turbo Timer / Short Run	
9	Timer Mode	
10	Arm/Disarm/Panic	
11	Panic Only	
12	Delete All Remotes	

SR5000

Channel Number	Function	Wire Color
1	Arm/Disarm/Panic	
2	Silent Mode / Channel 2 Output	Red/White
3	Remote Start	
4	Channel 4	Violet/Black
5	Arm Only	
6	Disarm Only	
7	Panic Only	
8	Auto-Learn Standard Configuration	
9	Auto-Learn Single Button Arm/Disarm Configuration	
10	Delete All Remotes	

RK1

Channel Number	Function	Wire Color
1	Auto-Learn Standard Configuration	
2	Arm Only	
3	Disarm Only	
4	Silent Mode / Channel 2 Output	Red/White
5	Remote Start	
6	Channel 4	Violet/Black
7	Turbo Timer / Short Run	
8	Timer Mode	
9	Arm/Disarm/Panic	
10	Panic Only	
11	Delete All Remotes	

Quick Reference Wiring Diagrams: K10 (Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(-) 200mA	Parking Light Output
White/Blue	(-) 200mA	Channel 3 Auxiliary Output
Black/White	(-) 200mA	Dome Light Supervision Output
Green		Not Used
Blue	(-) Negative	Second Unlock Output
Violet		Not Used
Black	(-) Negative	Chassis Ground
Yellow	(+) Positive	Ignition Input
Brown	(-) 200mA	Horn Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output

3-Pin Harness

Wire Color	Polarity	Function
Green	(-) Lock, (+) Unlock	(-) Lock, (+) Unlock
Empty		
Blue	(-) Unlock, (+) Lock	(-) Unlock, (+) Lock

Quick Reference Wiring Diagrams: K20 (Keyless Entry with On-Board Relays)

18-Pin Harness

Wire Color	Polarity	Function
Violet		Unlock #87 Normally Open (Input)
Red/White	(-) 200mA	Channel 2 Auxiliary Output
Blue/Black		Unlock #30 Common Output
Brown/Black		Unlock #87A Normally Open (Input)
Violet/Black		Lock #87 Normally Open (Input)
Orange	(-) 500mA	Ground When Armed
White/Black		Lock #87 Normally Closed
Yellow	(+) Positive	Ignition Input
Green/Black		Lock #30 Common Output
White/Blue	(-) 200mA	Channel 3 Auxiliary Output
Black/White		Output of Domelight Supervision Relay #87
LT. Green/Black	(-) 200mA	Factory Alarm Disarm
Black/White-1		Input of Domelight Supervision Relay #30
Brown	(-) 200mA	Horn Output
Blue	(-) Negative	Second Unlock Output
Black	(-) Negative	Chassis Ground
Red	(+) Positive	Constant Power
White	(+) 10 amp / (-) 200mA	Parking Light Output

Quick Reference Wiring Diagrams: RS10 (Remote Start with Keyless Entry)

5-Pin Harness

Wire Color	Polarity	Function
Blue/White	(-) 200mA	2nd Status Output / Rear Defroster
Gray	(-) Negative	Hood Pin Shutdown
Brown	(+) Positive	Brake Shutdown
Violet/White		Tachometer Input
Black/White	(-) Negative	Neutral Safety Shutdown

9-Pin Harness

Wire Color	Polarity	Function
White	(+) 10 amp / (-) 200mA	Parking Light Output
Black	(-) Negative	Chassis Ground
Red/White	(-) 200mA	Channel 2 Auxiliary Output
White/Red	(+) Positive	Activation Input
Gray/Black	(-) Negative	Wait to Start Input
White/Blue	(-) Negative	Activation Input
Yellow	(-) Negative	Ignition Input
Green/White	(-) 200mA	Factory Alarm Rearm
Green/Black	(-) 200mA	Factory Alarm Disarm

4-Pin Harness

Wire Color	Polarity	Function
Pink	(-) 200mA	3rd Ignition Turn Output
Purple	(-) 200mA	2nd Starter Output
Orange	(-) 200mA	2nd Accessory Output
Blue	(-) 200mA	Status Output

6-Pin Harness

Wire Color	Polarity	Function
Red	(+) Positive	High Current Constant Power
Pink/White	(+) Positive	Programmable Output for Accessory or Ignition 2
Red	(+) Positive	High Current Constant Power
Orange	(+) Positive	Accessory Output
Purple	(+) Positive	Starter Output
Pink	(+) Positive	Ignition Output

3-Pin Harness

Wire Color	Polarity	Function
Green	(-) Lock, (+) Unlock	(-) Lock, (+) Unlock
Empty		
Blue	(-) Unlock, (+) Lock	(-) Unlock, (+) Lock

Quick Reference Wiring Diagrams: RK1 (Advanced Remote Start with Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue	(-) Negative	Activation Input
Black/White	(-) 200mA	Dome Light Supervision Output
Green		Not Used
Blue	(-) Negative	Second Unlock Output
Violet		Not Used
Black	(-) Negative	Chassis Ground
Brown	(-) 200mA	Horn Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output

5-Pin Harness

Wire Color	Polarity	Function
Blue/White	(-) 200mA	2nd Status Output / Rear Defroster
Gray	(-) Negative	Hood Pin Shutdown
Brown	(+) Positive	Brake Shutdown
Violet/White		Tachometer Input
Black/White	(-) Negative	Neutral Safety Shutdown

4-Pin Harness

LT. Green/Black	(-) 200mA	Factory Alarm Disarm
Gray/Black	(-) Negative	Wait to Start Input
Green/White	(-) 200mA	Factory Alarm Rearm
Violet/Black	(-) 200mA	Channel 4 Auxiliary Output

3-Pin Harness

Wire Color	Polarity	Function
Green	(-) Lock, (+) Unlock	(-) Lock, (+) Unlock
Empty		
Blue	(-) Unlock, (+) Lock	(-) Unlock, (+) Lock

4-Pin Harness (Relay Satellite)

Blue	(-) 200mA	Status Output
Orange	(-) 200mA	2nd Accessory Output
Purple	(-) 200mA	2nd Starter Output
Pink	(-) 200mA	3rd Ignition Output

8-Wire Harness (Relay Satellite)

Purple	(+) Positive	Starter Side Starter Wire
Green	(+) Positive	Key Side Starter Wire
Red	(+) Positive	High Current Constant Power
Orange	(+) Positive	Accessory 1 Output
Red	(+) Positive	High Current Constant Power
Pink	(+) Positive	Ignition 1 Output
Red/White	(+) Positive	High Current Constant Power
Pink/White	(+) Positive	Ignition 2 Output

Quick Reference Wiring Diagrams: S100 (Security with Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue	(-) 200mA	Channel 3 Auxiliary Output
Black/White	(-) 200mA	Dome Light Supervision Output
Green	(-) Negative	Door Trigger Input
Blue	(-) Negative	Instant Trigger Input
Violet	(+) Positive	Door Trigger Input
Black	(-) Negative	Chassis Ground
Yellow	(+) Positive	Ignition Input
Brown	(+) Positive	Siren Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output

4-Pin Shock Sensor Harness

Wire Color	Polarity	Function
Red	(+) Positive	Constant Power
Black	(-) Negative	Chassis Ground
Blue	(-) Negative	Multiplex Input, Zone 2
Green	(-) Negative	Multiplex Input, Zone 4

3-Pin Harness

Wire Color	Polarity	Function
Green	(-) Lock, (+) Unlock	(-) Lock, (+) Unlock
Empty		
Blue	(-) Unlock, (+) Lock	(-) Unlock, (+) Lock

Quick Reference Wiring Diagrams: S400 (Security with Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue	(-) 200mA	Channel 3 Auxiliary Output
Black/White	(-) 200mA	Output of Domelight Supervision Relay #30
Green	(-) Negative	Door Trigger Input
Blue	(-) Negative	Instant Trigger Input
Violet	(+) Positive	Door Trigger Input
Black	(-) Negative	Chassis Ground
Yellow	(+) Positive	Ignition Input
Brown	(+) Positive	Siren Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output #30

8-Pin Relay Harness

Violet		Unlock #87 Normally Open (Input)
Blue/Black		Unlock #30 Common Output
Brown/Black		Unlock #87A Normally Open (Input)
Violet/Black		Lock #87 Normally Open (Input)
Green/Black		Lock #30 Common Output
White/Black		Lock #87 Normally Closed
Black/White		Domelight Supervision Relay Input #87
Red/White		Channel 2 Relay Input #87

4-Pin Shock Sensor Harness

Wire Color	Polarity	Function
Red	(+) Positive	Constant Power
Black	(-) Negative	Chassis Ground
Blue	(-) Negative	Multiplex Input, Zone 2
Green	(-) Negative	Multiplex Input, Zone 4

Quick Reference Wiring Diagrams: S660 (2-Way Security with Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue		No Function
Black/White	(-) 200mA	Output of Domelight Supervision
Green	(-) Negative	Door Trigger Input
Blue	(-) Negative	Instant Trigger Input
Violet	(+) Positive	Door Trigger Input
Black	(-) Negative	Chassis Ground
Empty		
Brown	(+) Positive	Siren Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output #30

1-Wire Harness

Wire Color	Polarity	Function
Yellow	(+) Positive	Ignition Input

6-Wire Harness

Wire Color	Polarity	Function
LT. Green/Black	(-) 200mA	Factory Alarm Disarm
Gray/Black		No Function
Green/White	(-) 200mA	Factory Alarm Rearm
Violet/Black	(-) 200mA	Channel 4 Auxiliary Output
White/Black	(-) 200mA	Channel 5 Auxiliary Output
LT. Blue	(-) 200mA	2nd Unlock Output

3-Pin Harness

Wire Color	Polarity	Function
Green	(-) Lock, (+) Unlock	(-) Lock, (+) Unlock
Empty		
Blue	(-) Unlock, (+) Lock	(-) Unlock, (+) Lock

Quick Reference Wiring Diagrams: S670 (2-Way Security with Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue	(-) 200mA	Channel 3 Auxiliary Output
Black/White	(-) 200mA	Output of Domelight Supervision
Green	(-) Negative	Door Trigger Input
Blue	(-) Negative	Instant Trigger Input
Violet	(+) Positive	Door Trigger Input
Black	(-) Negative	Chassis Ground
Yellow	(+) Positive	Ignition Input
Brown	(+) Positive	Siren Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output

7-Pin Relay Harness

Violet		Unlock #87 Normally Open (Input)
Blue/Black		Unlock #30 Common Output
Brown/Black		Unlock #87A Normally Open (Input)
Violet/Black		Lock #87 Normally Open (Input)
Green/Black		Lock #30 Common Output
White/Black		Lock #87 Normally Closed
Black/White		Domelight Supervision Relay Input #87

3-Pin Harness

Wire Color	Polarity	Function
Violet/Black	(-) 200mA	Channel 4 Output
Brown/Black	(-) 200mA	Horn Honk Output
Blue	(-) 200mA	2nd Unlock Output

4-Pin Shock Sensor Harness

Wire Color	Polarity	Function
Red	(+) Positive	Constant Power
Black	(-) Negative	Chassis Ground
Blue	(-) Negative	Multiplex Input, Zone 2
Green	(-) Negative	Multiplex Input, Zone 4

Quick Reference Wiring Diagrams: SR1000 (Security with Remote Start and Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue	(-) Negative	Activation Input
Black/White	(-) 200mA	Output of Domelight Supervision
Green	(-) Negative	Door Trigger Input
Blue	(-) Negative	Instant Trigger Input
Violet	(+) Positive	Door Trigger Input
Black	(-) Negative	Chassis Ground
Empty		
Brown	(+) Positive	Siren Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output

5-Pin Harness

Wire Color	Polarity	Function
Blue/White	(-) 200mA	2nd Status Output / Rear Defroster
Gray	(-) Negative	Hood Pin Shutdown
Brown	(+) Positive	Brake Shutdown
Violet/White		Tachometer Input
Black/White	(-) Negative	Neutral Safety Shutdown

6-Wire Harness

Wire Color	Polarity	Function
LT. Green/Black	(-) 200mA	Factory Alarm Disarm
Gray/Black		No Function
Green/White	(-) 200mA	Factory Alarm Rearm
Violet/Black	(-) 200mA	Channel 4 Auxiliary Output
White/Black	(-) 200mA	Channel 5 Auxiliary Output
LT. Blue	(-) 200mA	2nd Unlock Output

4-Pin Shock Sensor Harness

Wire Color	Polarity	Function
Red	(+) Positive	Constant Power
Black	(-) Negative	Chassis Ground
Blue	(-) Negative	Multiplex Input, Zone 2
Green	(-) Negative	Multiplex Input, Zone 4

4-Pin Harness (Relay Satellite)

Blue	(-) 200mA	Status Output
Orange	(-) 200mA	2nd Accessory Output
Purple	(-) 200mA	2nd Starter Output
Pink	(-) 200mA	3rd Ignition Output

8-Wire Harness (Relay Satellite)

Purple	(+) Positive	Starter Side Starter Wire
Green	(+) Positive	Key Side Starter Wire
Red	(+) Positive	High Current Constant Power
Orange	(+) Positive	Accessory 1 Output
Red	(+) Positive	High Current Constant Power
Pink	(+) Positive	Ignition 1 Output
Red/White	(+) Positive	High Current Constant Power
Pink/White	(+) Positive	Ignition 2 Output

Quick Reference Wiring Diagrams: SR5000 (2-Way Security with Remote Start and Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue	(-) Negative	Activation Input
Black/White	(-) 200mA	Output of Domelight Supervision
Green	(-) Negative	Door Trigger Input
Blue	(-) Negative	Instant Trigger Input
Violet	(+) Positive	Door Trigger Input
Black	(-) Negative	Chassis Ground
Empty		
Brown	(+) Positive	Siren Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output

6-Pin Harness

Wire Color	Polarity	Function
Blue	(-) 200mA	Status / Factory Security Rearm Output
Blue/Black	(-) 200mA	3rd Ignition Output
Gray	(-) Negative	Hood Pin Shutdown
Brown	(+) Positive	Brake Shutdown
Violet/White		Tachometer Input
Black/White	(-) Negative	Neutral Safety Shutdown

5-Pin Remote Start Ribbon Harness

Wire Color	Polarity	Function
Red	(+) Positive	Constant Power
Yellow	(+) Positive	Ignition Input
Pink	(-) 200mA	1st and 2nd Ignition Relay Output
Orange	(-) 200mA	Accessory Relay Output
Purple	(-) 200mA	Starter Relay Output

3-Pin Auxiliary Harness

Wire Color	Polarity	Function
Gray/Black	(-) Negative	Wait to Start Input
LT. Green/Black	(-) 200mA	Factory Alarm Disarm / Special Accessory Output
Violet/Black	(-) 200mA	Channel 4 Output

4-Pin Shock Sensor Harness

Wire Color	Polarity	Function
Red	(+) Positive	Constant Power
Black	(-) Negative	Chassis Ground
Blue	(-) Negative	Multiplex Input, Zone 2
Green	(-) Negative	Multiplex Input, Zone 4

3-Pin Harness

Wire Color	Polarity	Function
Green	(-) Lock, (+) Unlock	(-) Lock, (+) Unlock
Empty		
Blue	(-) Unlock, (+) Lock	(-) Unlock, (+) Lock

Quick Reference Wiring Diagrams: SR6000 (2-Way Security with Remote Start and Keyless Entry)

12-Pin Harness

Wire Color	Polarity	Function
Orange	(-) 500mA	Ground When Armed
White	(+) 10 amp / (-) 200mA	Parking Light Output
White/Blue	(-) Negative	Activation Input
Black/White	(-) 200mA	Output of Domelight Supervision
Green	(-) Negative	Door Trigger Input
Blue	(-) Negative	Instant Trigger Input
Violet	(+) Positive	Door Trigger Input
Black	(-) Negative	Chassis Ground
Empty		
Brown	(+) Positive	Siren Output
Red	(+) Positive	Constant Power
Red/White	(-) 200mA	Channel 2 Auxiliary Output

5-Pin Harness

Wire Color	Polarity	Function
Blue/White	(-) 200mA	2nd Status Output / Rear Defroster
Gray	(-) Negative	Hood Pin Shutdown
Brown	(+) Positive	Brake Shutdown
Violet/White		Tachometer Input
Black/White	(-) Negative	Neutral Safety Shutdown

6-Wire Harness

Wire Color	Polarity	Function
LT. Green/Black	(-) 200mA	Factory Alarm Disarm
Gray/Black	(-) Negative	Wait to Start Input
Green/White	(-) 200mA	Factory Alarm Rearm
Violet/Black	(-) 200mA	Channel 4 Auxiliary Output
White/Black	(-) 200mA	Channel 5 Auxiliary Output
LT. Blue	(-) 200mA	2nd Unlock Output

4-Pin Shock Sensor Harness

Wire Color	Polarity	Function
Red	(+) Positive	Constant Power
Black	(-) Negative	Chassis Ground
Blue	(-) Negative	Multiplex Input, Zone 2
Green	(-) Negative	Multiplex Input, Zone 4

3-Pin Harness

Wire Color	Polarity	Function
Green	(-) Lock, (+) Unlock	(-) Lock, (+) Unlock
Empty		
Blue	(-) Unlock, (+) Lock	(-) Unlock, (+) Lock

4-Pin Harness (Relay Satellite)

Blue	(-) 200mA	Status Output
Orange	(-) 200mA	2nd Accessory Output
Purple	(-) 200mA	2nd Starter Output
Pink	(-) 200mA	3rd Ignition Output

8-Wire Harness (Relay Satellite)

Purple	(+) Positive	Starter Side Starter Wire
Green	(+) Positive	Key Side Starter Wire
Red	(+) Positive	High Current Constant Power
Orange	(+) Positive	Accessory 1 Output
Red	(+) Positive	High Current Constant Power
Pink	(+) Positive	Ignition 1 Output
Red/White	(+) Positive	High Current Constant Power
Pink/White	(+) Positive	Ignition 2 Output

Marine Audio

Land or Sea – Clarion Will Take You There

Quick Release Door with Watertight Seal

The design of this door with its unique rubber gasket and door assembly, gives you maximum protection of the CMD4's internal components. This design gives the user one-touch easy loading of CDs. You can rest assured of long lasting moisture protection with at least 10,000 duty cycles for durability.

CMD4's Water-Resistant Face Plate Meets IEC 60529/IPX5 Watertight Standard

Clarion's water-resistant face plate on the CMD4 withstands a 65 gallon stream of water from a 1-inch diameter hose at 10 feet for 5 minutes. This standard eliminates concerns of water damage caused by rain, splashes, and wash downs.

Integrated Drip Shield, Mounting Gasket, and Bracket

This design protects the source unit chassis from front panel leaks and seals the bulkhead against leakage, augmenting the water-resistant face plate on the CMD4. It also affords maximum chassis support and easy installation.

Silicone Oil Damped Suspension System and Fully Coated Circuit Board

Specially coated circuit boards resist mold, mildew, and moisture damage. Our tried-and-true CD mechanisms minimize mistracking without resorting to buffer circuits, which add distortion and degrade sound quality.

Conformally Coated PC Boards

All Clarion Marine head units have had their circuit boards coated with Pelgan Z. This is a product developed by Dow Corning specifically to protect electronic components being used in harsh environments. This coating is one of the many reasons why Clarion Marine head units meet the ASTM B117 Salt/Fog Exposure specification.

Marine Power Amplifiers

Power amplifiers are essential in marine applications where high ambient noise competes with the sound system. The fact is that, without an amplifier, increasing volume means increasing distortion.

Just like increasing the size of the engine adds to the performance of a boat, increasing power of the audio system adds to its performance. People who know audio understand that amplifiers add more than just volume to music. They reduce distortion at high volumes and ensure that the music that you hear is crisp, clean, and powerful.

Marine Audio – Technologies

The Industry Reference

Once again raising the performance bar, Clarion Marine is set to unleash a line of marine speakers that will satisfy anyone's need for sonic purity. The line starts with Clarion's CM1635, an audiophile-grade component speaker system that boasts a mid-woofer cone, titanium-coated tweeter and an integrated crossover. The pure sound radiating from this speaker combination is further enhanced by the tweeter's ability to pivot, allowing you to accurately direct the sound where you need it most. Rounding out Clarion's marine line is its high-performance coaxial speakers, and its 10" subwoofers.

Nobody understands the marine audio environment like Clarion - we invented the category and remain the industry leader. As part of our ongoing commitment to offering products that will withstand the test of time, we follow certain testing guidelines to ensure reliable, trouble-free performance.

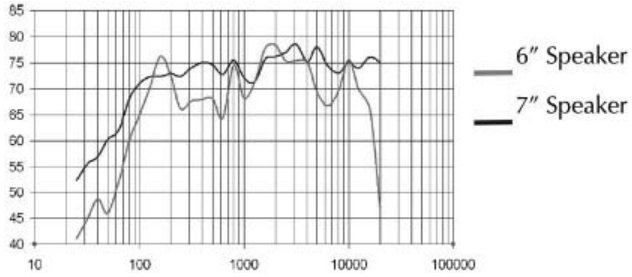
ASTM B117 - Salt and Fog Exposure Testing Standard

This test was created to evaluate a products corrosion resistance over extended exposure to salt water. The test involves subjecting a device (speaker for example) to a spray in a closed chamber of a solution of NaCl ranging in concentration from 3.5 to 20%. The second part of the test involves bubbling compressed air through a humidifying tower containing hot de-ionized water. This recreates a condition of 100% humidity. Clarion products subjected to these tests must pass without corrosion, damage or failure.

ASTM D4329 - UV Exposure Testing

This testing standard describes an evaluation of the damaging effects of long term outdoor UV exposure. The test subjects must withstand alternating cycles of 8 hours of ultraviolet light exposure at 70 degrees Celsius, followed by 4 hours of condensation at 50 degrees Celsuis, then repeated for extended periods of time in multiples of 500 hours per test (up to 2000 Hours). The devices under test must pass without discolouring, fading, chalking or cracking.

7-inch speakers



Clarion's line of 7-inch diameter speakers set new standards for marine entertainment. These speakers were designed using the same strict tolerances as our 6.5-inch speakers, but offer improved efficiency, as well as improved bass output thanks to a 35% increase in cone area.

The results of our efforts is a speaker that is 3dB more efficient with dramatically improved low frequency extension and smooth band to band performance.

Sport Series Speakers

The Sport Series of speakers were introduced to add options to your purchase. If you are looking for aggressive style with the same proven marine performance you've come to expect from Clarion, then the Sport Series CMCX7.1s 7-inch coaxial and CMSW10.1s 10" subwoofer are the perfect choice.

Marine Audio – CMD4/M455 Information

CMD4

MARINE AM/FM CD PLAYER WITH CENET CONTROL AND WATERTIGHT FACEPLATE

Features

- Meets or Exceeds ASTM B117 (Salt/Fog Exposure) standard
- Meets or Exceeds ASTM D4329 (UV Exposure) standard
- Exclusive flip-down Marinized Front Panel
- Plays CD-R / CD-RW
- Pelgan Z Conformally Coated circuit board
- Input for Marine Wired Remote Control (remote not included)
- 2-Band Parametric EQ(Z Enhancer Plus)
- White Positive LCD with adjustable contrast
- CeNET Control of Optional TV Tuner, 6-Disc CD Changer, Ipod Interface and Satellite Radio Receiver
- Subwoofer Level Control
- 6-Channel RCA Line Level Output
- 2-Channel RCA Line Level Aux Input
- 212-watt Amplifier (53 W x 4)
- Magi-Tune+ Tuner with 18 FM/6 AM Presets
- Magna Bass EX
- Screen Saver
- iPod Interface (requires EA1251B)

Specifications

FM Useable Sensitivity. . . . . 9 dB
FM 50 dB Quieting Sensitivity . . . . . 15 dB
FM Alternate Channel Selectivity . . . . . 70 dB
FM Stereo Separation . . . . . 35 dB

FM Stereo Frequency Response. . . . . .30 Hz to 15 kHz
CD Signal-to-Noise Ratio. . . . . 100 dB

CD Frequency Response. . . . . .10 Hz to 20 kHz
CD Dynamic Range . . . . . 95 dB

Maximum Power Output . . . . . .53 W x 4
Continuous Power Output . . . . . .18 W x 4
Line-Level Output Voltage . . . . . .2.0 V
Dimensions, Chassis (h x w x d) . . . . . 2" x 7" x 6"
Dimensions, Faceplate (h x w x d). . . .3.62" x 7.85" x 1.85"

M455

MARINE AM/FM CD PLAYER W/ CENET CONTROL

Features

- Pelgan Z Conformally Coated circuit board
- Plays CD-R and CD-RWs
- 2-Band Parametric EQ (Z-Enahncer Plus)
- Rotary Volume Control
- Input for Marine-Wired Remote Control (remote not included)
- White Positive LCD with White Buttons
- CeNET Control of Optional TV Tuner, 6-Disc CD Changer, Ipod Interface and Satellite Radio Receiver
- Detachable Faceplate
- 4-Channel RCA Line-Level Output
- 2-Channel RCA Line-Level Aux Input
- 208-watt Amplifier (52 W x 4)
- Magi-Tune Tuner with 18 FM/6 AM Presets
- Magna Bass EX
- Screen Saver
- iPod Interface (requires EA1251B)

Specifications

FM Useable Sensitivity. . . . . 9 dB
FM 50 dB Quieting Sensitivity . . . . . 15 dB
FM Alternate Channel Selectivity . . . . . 70 dB
FM Stereo Separation . . . . . 35 dB

FM Stereo Frequency Response. . . . . .30 Hz to 15 kHz
CD Signal-to-Noise Ratio. . . . . 100 dB

CD Frequency Response. . . . . .10 Hz to 20 kHz
CD Dynamic Range . . . . . 95 dB

Maximum Power Output . . . . . .52 W x 4
Continuous Power Output . . . . . .17 W x 4
Line-Level Output Voltage . . . . . .2.0 V
Dimensions, Chassis (h x w x d) . . . . . 2" x 7" x 6"

Replacement DCPs for Marine Units

DCP510	DCP for M455
DCP502	DCP for M255
DCP201	DCP for M5675RET
DCP446	DCP for M335
DCP447	DCP for M235

Marine Audio – M255/DCZ625 Information

M255

MARINE AM/FM CD PLAYER

Features

- Pelgan Z Conformally Coated circuit board
- Plays CD-R and CD-RWs
- Z-Enahncer
- Rotary Volume Control
- White Positive LCD with White Buttons
- Detachable Faceplate
- 2-Channel RCA Line-Level Output
- 200-watt Amplifier (50 W x 4)
- Magi-Tune Tuner with 18 FM/6 AM Presets
- Magna Bass EX
- Screen Saver

Specifications

FM Useable Sensitivity. . . . . 9 dB
FM 50 dB Quieting Sensitivity . . . . . 15 dB
FM Alternate Channel Selectivity . . . . . 70 dB
FM Stereo Separation . . . . . 35 dB

FM Stereo Frequency Response. . . . . .30 Hz to 15 kHz
CD Signal-to-Noise Ratio. . . . . 100 dB

CD Frequency Response. . . . . .10 Hz to 20 kHz
CD Dynamic Range . . . . . 95 dB

Maximum Power Output . . . . . .50 W x 4
Continuous Power Output . . . . . .16 W x 4
Line-Level Output Voltage . . . . . .2.0 V
Dimensions, Chassis (h x w x d) . . . . . 2" x 7" x 6"

DCZ625

CENET 6-DISC CHANGER

Features

- 6- Disc Magazine
- Spring-Loaded Silicone-Filled Oil-Dampened Suspension
- Dual 1-Bit D/A Converters
- Zero-Bit Detector Mute Circuit
- 3-Beam Laser-Tracking System
- 120-Degree Mounting Capability

Specifications

CD Wow and Flutter. . . . . Unmeasurable
CD Channel Separation . . . . . 85 dB

CD Signal-to-Noise Ratio. . . . . 100 dB

CD Frequency Response. . . . . .5 Hz to 20 kHz
CD Dynamic Range . . . . . 94 dB

Dimensions (h x l x d). . . . . 2-1/2" x 9" x 6-5/8"

NOTE - EA1251B Connectivity

- The CMD4 and M455 cannot display song titles when operating the iPod via the interface.
- The interface is not equipped with a pass-through CeNET connection. Installers must use Clarion's CCA519 to connect additional CeNET-controlled components.

CMRC1-SB/BSS and CMRC2-SB/BSS

CMRC1-SB

WATERPROOF WIRED LCD REMOTE CONTROL

CMRC1-BSS

WATERPROOF WIRED LCD REMOTE CONTROL

Same as above with Stainless Steel trim ring.

Features

- For use with CMD4, M455 or XMD3
- LCD Readout
- Uses Standard-Gauge 3" Hole-Cutout Size
- Round Mounting Hole for Easy Installation
- Water-Resistant Design
- Rubber-Gasket Rear Seal
- UV-Resistant Front Panel and Rubber Buttons
- Controls all Major Radio, CD, CD Changer, and Satellite Radio Functions

M101RXCRET

- 16' Cable for Both Wired Remote Controls (Not Included with Remote Controls)

M101RYCRET

- "Y" Cable to Connect Two Wired Remote Controls per Radio

CMRC2-SB

WATERPROOF WIRED REMOTE CONTROL

CMRC2-BSS

WATERPROOF WIRED REMOTE CONTROL

Same as above with Stainless Steel trim ring

Features

- For use with CMD4 or M455
- Uses Standard-Gauge 2-1/16"Hole-Cutout Size
- Round Mounting Hole for Easy Installation
- Water-Resistant Design
- Rubber-Gasket Rear Seal
- UV-Resistant Front Panel and Rubber Buttons
- Controls all Major Radio and CD Functions
- 2-1/16" round mounting hole

REMOTE KITS

K-CMRC1-SB includes CMRC1-SB remote and M101RXC 23-foot extension cable

K-CMRC1-BSS includes CMRC1-BSS remote and M101RXC 23-foot extension cable

K-CMRC2-SB includes CMRC2-SB remote and M101RXC 23-foot extension cable

K-CMRC2-BSS includes CMRC2-BSS remote and M101RXC 23-foot extension cable

Marine Audio – APX280/APX480 Information

APX280M

2/1-CHANNEL POWER AMPLIFIER

Features

- Maximum 320-watt Power Output
- Continuous 160-watt Average Power Output (80 W x 2 @ 4 Ohms, 20 Hz to 20 kHz 0.05% THD)
- Typical 2-Ohm Stereo 125 W x 2 @ 0.2% THD
- Typical Bridged Power 250W x 1 @ 0.2% THD, 1 kHz
- Bass Extender Control, 0 to 15dB @ 45Hz
- Adjustable High-/Low-Pass Crossover, 55 to 550 Hz, 12 dB/octave
- Mixed-Mode Operation
- MOSFET Power Supply
- Speaker Level Inputs
- Conformally Coated Double-Sided PCB

Specifications

Frequency Response . . . . . 20 Hz to 20 kHz
Signal-to-Noise Ratio . . . . . 98 dB
THD @ Rated Output . . . . . 0.05 %
Input Sensitivity . . . . . 0.2 to 2.5 V
Maximum Power Output . . . . . 320 W (160 W x 2)
Continuous Output Power . . . . . 160 W (80 W x 2),
2-ohm Stereo Output (@ 0.5 % THD) . . . . . 125 W x 2
Bridged Power (@ 0.5 % THD) . . . . . 300 W x 1
Dimensions (h x w x l) . . . . . 2-1/8" x 8-1/4" x 9"

APX480M

4/3/2-CHANNEL POWER AMPLIFIER

Features

- Maximum 640-watt Power Output
- Continuous 320-Watt Average Power Output (80 W x 4 Into 4 Ohms, 20 Hz to 20kHz, 0.08%THD)
- Typical 2-Ohm Stereo 115W x 4 @ 0.2% THD
- Bass Extender Control, 0 to 15dB @ 45Hz
- Adjustable High-/Low-Pass Crossover, 55 to 550 Hz, 12 dB/octave
- Mixed-Mode Operation
- 4-/3-/ 2-Channel Operation
- MOSFET Power Supply
- Speaker Level Inputs
- Conformally Coated Double-Sided PCB

Specifications

Frequency Response . . . . . 20 Hz to 20 kHz
Signal-to-Noise Ratio . . . . . 95 dB
THD @ Rated Output . . . . . 0.08 %
Input Sensitivity . . . . . 0.2 to 2.5 V
Maximum Power Output . . . . . 640 W (160 W x 4)
Continuous Output Power . . . . . 320 W (80 W x 4),
2-ohm Stereo Output (@ 0.5 % THD) . . . . . 115 W x 4
Bridged Power (@ 0.5 % THD) . . . . . 230 W x 2
Dimensions (h x w x l) . . . . . 2-1/8" x 8-1/4" x 13"

Marine Audio – Speakers Information

CM1605

6-1/2" MARINE DUAL CONE SPEAKER

Features

- Maximum Power Handling: 100 Watts
- Continuous Power Handling: 25 Watts
- Cone Material: Polypropylene Woofer Cone
- Santoprene Rubber Surround
- Rubber Mounting Gasket
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 60Hz – 18kHz
- Efficiency: 87dB
- Cut Out Size: 5”
- Mounting Depth: 2 3/8”

CM1625

6-1/2" MARINE COAXIAL SPEAKER

Features

- Maximum Power Handling: 100 Watts
- Continuous Power Handling: 25 Watts
- Polypropylene Woofer Cone
- Santoprene Rubber Surround
- Rubber Mounting Gasket
- 3/4” Titanium-Coated Dome Tweeter
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 60Hz – 20kHz
- Efficiency: 87dB

CM1635

6-1/2" MARINE COMPONENT SPEAKERS

Features

- Maximum Power Handling: 130 Watts
- Continuous Power Handling: 35 Watts
- Polypropylene Woofer Cone
- Santoprene Rubber Surround
- 1” Titanium-Coated Dome Tweeter
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 60Hz – 20kHz
- Efficiency: 87dB
- Cut Out Size (Woofer): 5”
- Cut Out Size (Tweeter): 2”
- Mounting Depth (Woofer): 5”
- Mounting Depth (Tweeter): 7/8”
- Tweeter Mounting Configurations: Flush or Surface

CMSW10.1

10" MARINE SUBWOOFER

Features

- Maximum Power Handling: 350 Watts
- Continuous Power Handling: 100 Watts
- Polypropylene Cone
- Santoprene Rubber Surround
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 60Hz – 2.5kHz
- Efficiency: 88dB @ 1meter, 1watt
- Wire Terminals: Gold-Plated Spade Terminals
- Rubber Mounting Gasket
- Protected Magnet and Rear Cone Design
- Cut Out Size: 9 1/16”
- Mounting Depth: 4 1/4”
- Impedance: 4 Ohm

Marine Audio – Speakers Information

CMCS7.1

7" MARINE COMPONENT SPEAKERS

Features

- Maximum Power Handling: 160 Watts
- Continuous Power Handling: 50Watts
- Polypropylene Woofer Cone
- Santoprene Rubber Surround
- Rubber Mounting Gasket
- 1.25” Titanium-Coated Dome Tweeter
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 60Hz – 20kHz
- Efficiency: 93dB
- Cut Out Size (Woofer): 6 1/4”
- Cut Out Size (Tweeter):
- Mounting Depth (Woofer): 5”
- Mounting Depth (Tweeter):
- Tweeter Mounting Configurations: Flush or Surface

CMCX7.1

7" MARINE COAXIAL SPEAKERS

Features

- Maximum Power Handling: 160 Watts
- Continuous Power Handling: 50 Watts
- Polypropylene Woofer Cone
- Santoprene Rubber Surround
- Rubber Mounting Gasket
- 1.25” Titanium-Coated Dome Tweeter
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 50Hz – 22kHz
- Efficiency: 93dB
- Cut Out Size: 6 1/4”
- Mounting Depth: 2 3/8”

CMDC7.1

7" MARINE DUAL CONE SPEAKERS

Features

- Maximum Power Handling: 120 Watts
- Continuous Power Handling: 40 Watts
- Polypropylene Woofer Cone
- Santoprene Rubber Surround
- Rubber Mounting Gasket
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 50Hz – 18kHz
- Efficiency: 93dB
- Cut Out Size: 6 1/4”
- Mounting Depth: 2 3/8”

CMCS7.1s

7" SPORT SERIES MARINE SPEAKERS

Features

- Meets or exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or exceeds ASTM D4329 (UV Exposure)
- 7" Polypropylene Woofer
- 1.25" Titanium-Dome Tweeter
- Santoprene Rubber Surround
- Rubber Mounting Gasket
- UV-Resistant High-Impact Centrex 814 Plastic Grill and frame
- Gold-Plated Speaker Terminals
- Rubber-Insulated Tinsel Leads
- Stainless Steel Mounting Hardware
- 160W Power Handling

CMSW10.1s

10" SPORT SERIES MARINE SUBWOOFER

Features

- Maximum Power Handling: 350 Watts
- Continuous Power Handling: 100 Watts
- Polypropylene Woofer Cone
- Santoprene Rubber Surround
- Rubber Mounting Gasket
- Meets or Exceeds ASTM B117 (Salt/Fog Exposure)
- Meets or Exceeds ASTM D4329 (UV Exposure)
- Frequency Response: 60Hz – 2.5kHz
- Efficiency: 88dB @ 1meter, 1watt
- Wire Terminals: Gold-Plated Spade Terminals
- Cut Out Size: 9 1/16”
- Mounting Depth: 4 1/4”
- Impedance: 4-Ohm

Marine Audio – Accessories

RTR600B

MANUAL OPERATION MARINE COVER

Features

- One-Piece design with removable screw covers
- Rubber gasket behind main housing
- Manual opening function
- Easy push-button release
- Protects DIN-sized radio from water splash damage

SEAGIM

MARINE ENCLOSURE WITH HYDRAULIC COVER

Features

- Protects 1-DIN radio from damage due to splashes
- Two-piece front panel design - Main housing and trim ring
- Rubber gasket behind main housing
- Two wire/vent openings in removable rear panel
- Damped opening function
- Reversible mounting hardware - surface or suspended mounting.

BNC5200B

HYDRAULIC MARINE COVER

FEATURES

- Two-piece front panel design - Main housing and trim ring
- Rubber gasket behind main housing
- Damped opening function
- Easy push-button release
- Protects DIN-sized radio from water splash damage

Marine Audio – Subwoofer Specifications

CMSW10.1 T-S Parameters

Fs (Hz)	**49.7**
Qms	**9.243**
VAS (Litres)	**21.57**
VAS (Cubic Feet)	**0.761**
MMs (Grams)	**63.46**
Xmax (mm)	**10**
Xmax (inches)	**0.394**
Sd (m2)	**0.0306**
Qes	**1.003**
Re	**3.857**
Le	**1.977**
Z	**4.629**
Bl	**8.729**
Qts	**0.905**
dB SPL (1W/1M)	**86.2**
Power (RMS)	**350**
Vd (Cubic Feet)	**0.045**
Outside Diameter	**10-9/16"**
Mounting Hole	**8.875**
Mounting Depth	**4.5"**
Total Weight	**9.8 lbs**
Grill Colour	**White**

Enclosure Designs

Sealed Enclosure
Net Internal Air Volume: 0.9 ft3
F3 Frequency: 52.5 Hz
Total System Q: 1.1

Vented Enclosure
Net Internal Air Volume: 1.5 ft3
Vent Dimension: 3" ID x 5.6" Long
F3 Frequency: 32.19 Hz

CMSW10.1s T-S Parameters

Fs (Hz)	**50.09**
Qms	**8.256**
VAS (Litres)	**18.6**
VAS (Cubic Feet)	**0.657**
MMs (Grams)	**72.51**
Xmax (mm)	**12**
Xmax (inches)	**0.472**
Sd (m2)	**0.03067**
Qes	**1.084**
Re	**4.152**
Le	**2.064**
Z	**4.983**
Bl	**9.351**
Qts	**0.958**
dB SPL (1W/1M)	**85.33**
Power (RMS / MAX)	**350**
Vd (Cubic Feet)	**0.045**
Outside Diameter	**10-9/16"**
Mounting Hole	**8.875**
Mounting Depth	**4.5"**
Total Weight	**9.8 lbs**
Grill Colour	**Silver/Grey**

Enclosure Designs

Sealed Enclosure
Net Internal Air Volume: 0.6 ft3
F3 Frequency: 56.24 Hz
Total System Q: 1.0

Vented Enclosure
Net Internal Air Volume: 1.4 ft3
Vent Dimension: 3" ID x 5.875" long
F3 Frequency: 31.48 Hz

Car Audio Reference Guide

Special Thanks to the Mobile Dynamics Toronto Campus for their assistance in the creation of this portion of the 2006 Clarion Application Guide

Car Audio Reference Guide

This section of the 2006 Clarion Application Guide provides some basic guidelines, tips and tricks related to the installation and design of a car audio system. This section in no way replaces proper training, certification, mentorship and experience.

Tools

Clarion recommends that high quality tools be used at all times. The use of quality tools ensure proper engagement with fasteners, a reduced chance of stripping, rounding over or damage to the vehicle. This applies to socket sets, screwdrivers, crimpers, pliers, wrenches, wire strippers and so forth.

Clarion recommends that only a high quality Digital Multimeter be used for testing ALL electrical circuits. Test lights can cause damage to automotive computer systems, resulting in expensive repairs.

When installing mobile security, convenience and remote starts, you commonly have to probe many wires. A tool that makes this very easy is the Power Probe II. It will indicate both 12V or Ground both with an LED and an audible tone - meaning you don't need to 'read' a display. It will also provide power and ground at the test probe tip - ideal for testing door locks and other electrical components.

Clarion strongly recommends that all electrical connections be soldered. A properly performed solder connection will start with a good solid mechanical connection - ie: The wires should already have a strong mechanical connections - typically twisted together. Once the mechanical connection has been established, then the connection can be heated thoroughly with the soldering iron and solder flowed into the

connection. Soldering provides an airtight connection that helps to prevent corrosion. Once the solder connection is complete and has cooled, wrap the connection tightly with good quality electrical tape. Clarion recommends 3M vinyl tape.

An alternative, though less reliable than soldering is the use of high quality, properly sized butt connectors and a good quality crimping tool. Clarion recommends the Klein 1005 or equivalent crimping tool.

Clarion does not recommend the 'twist and tape' method of making electrical connections.

Vehicle preparation and precaution

Before beginning work on a vehicle, inspect it thoroughly for pre-existing damage or non-functioning circuitry. Show the customer any problems BEFORE you begin work on the vehicle.

If you will be required to disconnect the battery, ensure that you have the security code for the source unit - if applicable.

When working under the hood, use fender covers at all times to prevent damage. Use magnetic screw trays to hold nuts, bolts and screws, and store all tools on a cart next to the vehicle. Do not rest tools on the engine, cowl or fender of the car.

When working inside the car use carpet and seat protectors. If you will be making electrical connections, protect the area below where you are working with a drop cloth capable of handling drops of solder.

Car Audio Physics

Understanding some basic fundamentals of physics are required to sell and install car audio products.

Sound

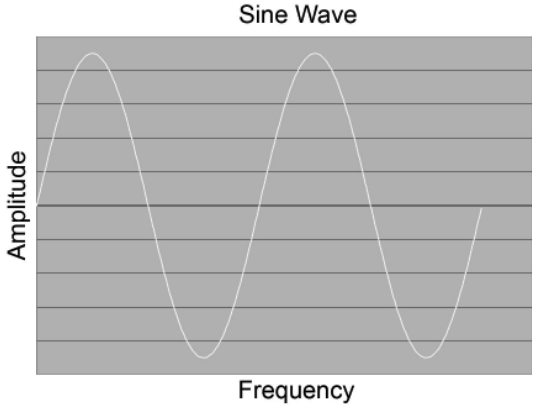
Sound is essentially changes in air pressure. These compressions and rarefactions cause minute bones inside our ears to vibrate, which

our brains translate into perceived sound.

The chart above shows an electrical representation of a spoken conversation. The high points represent high sound levels and low areas represent little or no sound.

Frequency

If you look at sound using an oscilloscope, you can see the voltage moving up and down relative to time. If you are listening to a pure tone - like the



'test tone' on your TV in the middle of the night, then waveform will look something like the graph below.

Period

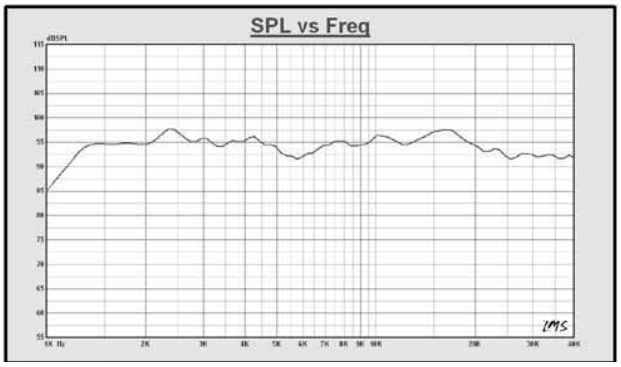
The period is the amount of time between two identical points on a repeating waveform. We measure this in seconds (or milliseconds. If you take the reciprocal of this number, you get frequency. For example - If you measure a period using a scope of 0.025 seconds, then take the reciprocal (1/0.025) you will see the frequency is 40Hz.

Amplitude

The Amplitude of a sound describes its intensity, loudness or strength. Later on we will explain the Decibel scale and how it relates to sound pressure measurement and observation.

Frequency Response

If you look at the sound coming from a speaker, you want all the different sounds to be reproduced at the same level. This is known as the frequency response of a speaker. A frequency response graph, shows the output level (of a speaker, amplifier, source unit, etc). The X-axis represents the different frequencies measure and the Y-axis represents how strong the output is.



Ideally, a speaker would produce all frequencies at exactly the same level, but due to the physical limitations of every speaker, this is not possible. The graph below shows the frequency response of a typical high-quality full-range speaker.

Phase

Phase refers to the time between - or relative arrival time of two signals or waveforms. Imagine two speakers playing the exactly same sound, set up in your living room. If you were to take one speaker and move it further away from you, the time it takes for the sound to arrive at your ears

changes. This is known as a delay or phase shift. The graph below shows a phase shift between two sine waves.

The goal of a high quality car audio system is to accurately reproduce the sound of a musical performance. When sound is recorded in stereo (two channels), it is of the utmost importance that the sound coming from each channel arrives at the listeners ear simultaneously. This can be achieved through proper speaker placement, or compensated for by using time alignment or digital delays.

Octave

An Octave is a way of describing a doubling or halving of a frequency. If a 1,000Hz (1kHz) tone is being played, and a second tone starts one octave higher, it will be at 2.0 kHz. If the second tone were an octave lower, it would be at 500Hz (0.5 kHz).

Decibel

This is one of the most misunderstood terms in modern audio discussions. The BEL is the unit of measure used to describe sound intensity. It was first defined by Alexander Graham Bell. The Bel is an extremely large unit of measure, so the Decibel unit is more commonly used. 1 Decibel (dB) is equal to 0.1 Bel.

The Decibel was created in response to numerous tests on human hearing to describe sound intensities (volume).

1dB = The smallest perceivable change in intensity within the most sensitive range of human hearing (between 3 and 4 kHz)

3dB = The smallest perceivable difference in intensity at all frequencies.

10dB = A perceived doubling or halving of sound intensity

In terms of electrical signals, decibels can still be used to describe the difference between two voltages or amplitudes. This is quite convenient when talking about power coming from an amplifier, since each time we want to increase the perceived output from a speaker system by 3dB, we need to double the power coming from an amp.

Example: A speaker has an efficiency rating of 88dB 1W/1M. This means that when this speaker is installed in an infinite baffle (the wall of a very large room for example) and powered with 1Watt of power, it will produce 88dB of sound. If we want to increase the output of this speaker to 91dB, we need 2Watts of power from the amp. The following chart outlines the power required for this speaker to reproduce different sound levels:

Reference - 88dB 1W/1M

Output Level	Power (Watts)	Relative difference
118	1024	+30dB
115	512	+27dB
112	256	+24dB
109	128	+21dB
106	64	+18dB
103	32	+15dB
100	16	+12dB
97	8	+9dB
94	4	+6dB
91	2	+3dB
88	1	0dB
85	0.5	-3dB
82	0.25	-6dB
79	0.125	-9dB
76	0.0625	-12dB
73	0.03125	-15dB
70	0.015625	-18dB
67	0.0078125	-21dB
64	0.00390625	-24dB
61	0.001953125	-27dB
58	0.000976563	-30dB

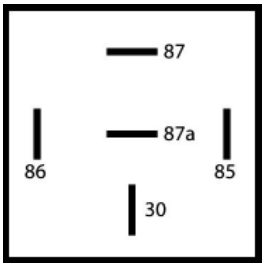
You can see that the power being produced by an amplifier needs to vary over an enormous range to reproduce music at different listening levels. You can also see that significant amounts of power are required to reproduce realistic listening levels, which is why high quality car audio amplifiers are very important.

Relays

The ability to switch high current electrical circuits using low current control systems has made the use of relays extremely popular. Relays can also be used to perform relatively elaborate processes - including conversion from positive to negative pulsing, negative to positive pulsing, momentary to constant pulsing, retained accessory circuits and so forth. This section will look at the basic connections on a relay and some of the most basic circuits. A few minutes of searching on the Internet will reveal some of the more complex circuits available.

Relay Connections

The most popular (and recommended) relays are available from Bosch and Potter and Brumfeld. These SPDT (Single Pole Double Throw) relays can handle in excess of 20A of current while only requiring 200mA (0.2 A) to energize the circuit.

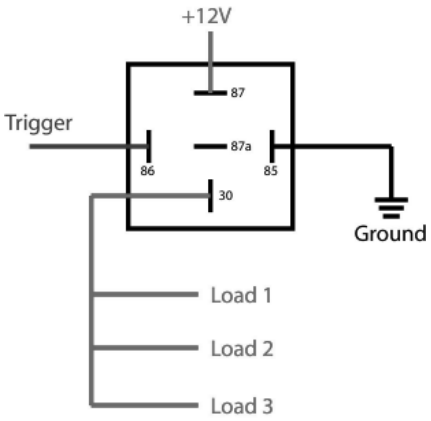


This diagram shows the pin locations and labels on the bottom of a relay.

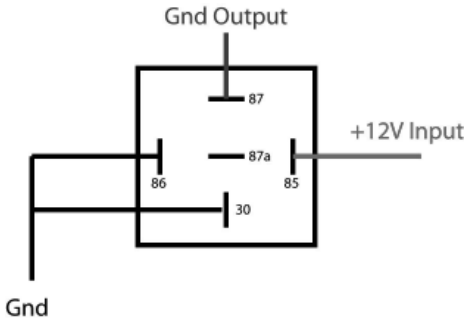
Pin	Function
30	Common Connection
87	Normally Open Connection
87a	Normally Closed Connection
85	Coil
86	Coil

Relay Circuits

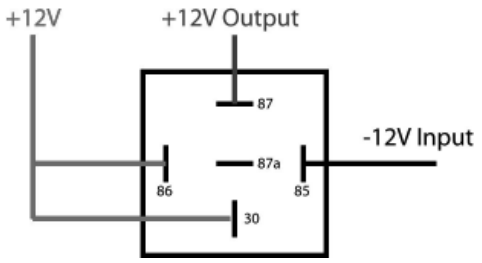
This circuit allows multiple loads to be switched from a single relay. This is convenient for using a single remote turn on wire from a source unit to turn on multiple amplifiers.



The following circuit will take a positive input (front a door trigger for example) and convert it to a negative output.



The following circuit will take a negative trigger (output from an alarm) and convert it to a positive output (to drive a light or fan for example).

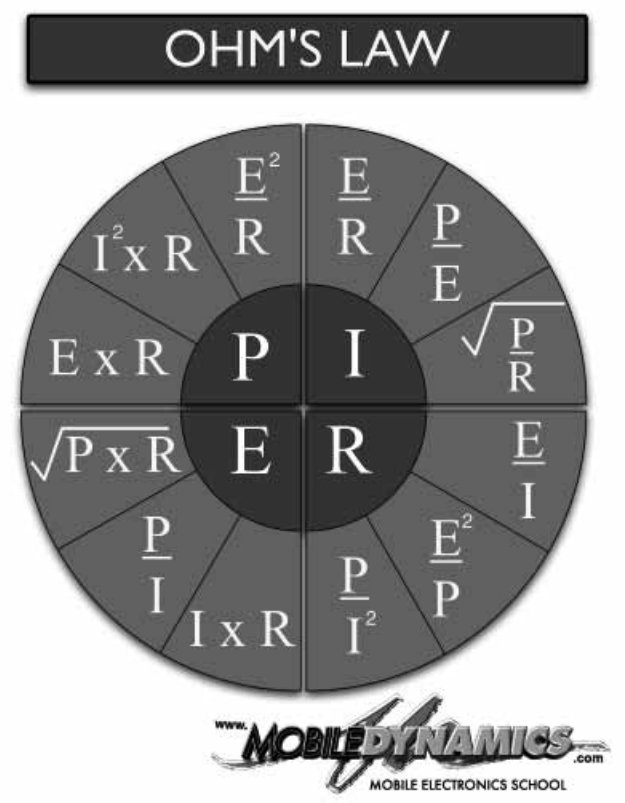


Common Car Audio Math

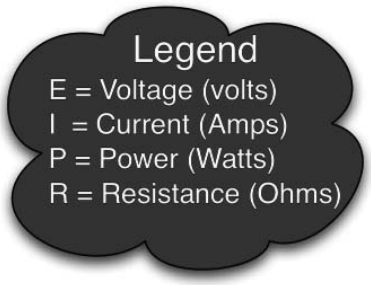
The following section provides a simple and easy to use reference for some of the more commonly utilized mathematical formulas in the car audio industry.

Ohm's Law

Ohm's Law was named after Georg Ohm, a mathematician and physicist, born in 1789 and lived to be 65 while living in Bavaria. Mr. Ohm created the foundation for the basic units of electricity which are now accepted as a standard worldwide. Ohm's Law describes the relationship between Power, Voltage, Current and Resistant in AC, DC and RF (Radio Frequency) circuits and is the foundation for all electronic circuit design.



The above chart provides all the common formulas related to Ohm's Law.



Voltage (measured in Volts) is a measurement of electrical potential between two points. One Volt is the potential difference required to move one coulomb of charge between two points in a circuit while using one Joule of energy.

Current (measured in Amps) describes the rate of electron flow in a circuit. One amp is equivalent to the flow of one coulomb (6.25x108 electrons) per second.

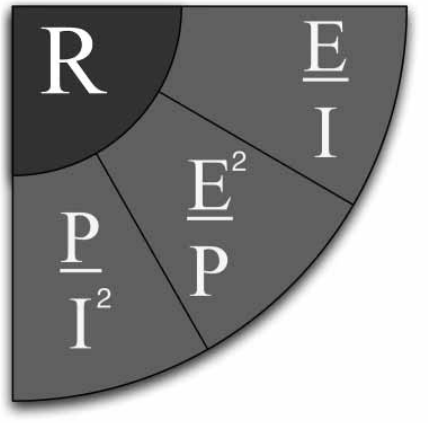
Resistance (measured in Ohms) is the unit of resistance to current flow. One Ohm of resistance will allow one Amp of current to pass when a voltage of one Volt is applied to the circuit. The Greek letter Omega ( ) is universally used to describe Ohms.

Power (measured in Watts) is a measurement of electrical work being done. One Watt is equivalent to one Joule of energy being transferred or dissipated in one second.

Joules is the Metric unit of energy (replaces Calorie) and is equivalent to the amount of work needed to apply a force of one Newton over a distance of 1 Meter. 1 Calorie = 4.184 Joules

These units are used to describe the function of any electrical circuit. Using the Ohm's Law wheel on the left side of this page, you can calculate any third unit when you know two of them.

Resistance Formula Calculations

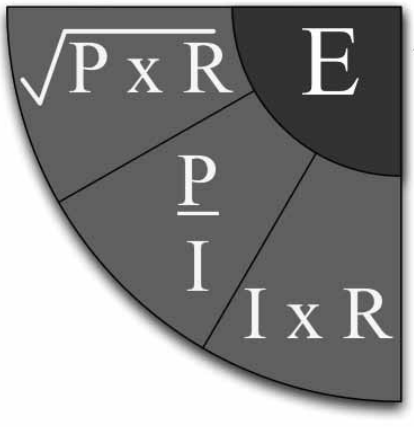


How to read the Ohm's Law wheel

Resistance = Voltage / Current
Resistance = Voltage^2 / Power
Resistance = Power / Current^2

Example:

If you know a circuit has a voltage potential of 12 Volts and 6 Amps of current is passing through it, then you can calculate the resistance in that circuit: 12 ÷ 6 = 2. The circuit has a resistance of 2 Ohms.



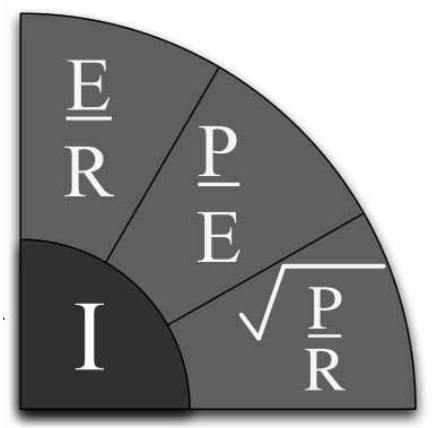
Voltage Formula Calculations

Example 1:

If you know a device (a resistor for example) has 2A of current being passed through it and has a resistance of 10 Ohms, then the voltage drop across the resistor will be: 2 x 10 = 20V

Example 2:

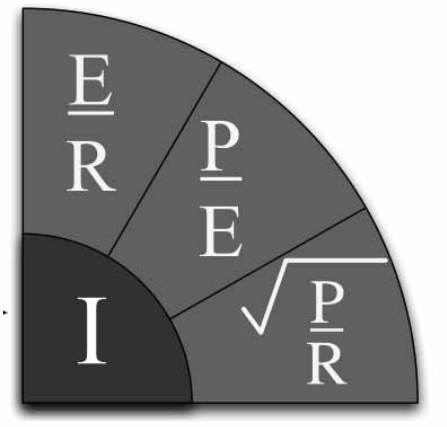
If you know a device is dissipate 10 Watts of power and has a resistance of 20 Ohms, then you can calculate the voltage being applied to the device: (10 x 20) = 14.14 Volts.



Current Formula Calculations

Example 1:

If you know a device is dissipating 100W of energy and has a resistance of 4 Ohms, you can calculate the current being passed through the device: (100 ÷ 4) = 5 Amps



Power Formula Calculations

Example 1:

If you know a device is dissipating 100W of power and 12V is being applied to the device, you can calculate the current passing through the device: 100 ÷ 12 = 8.33A

Resistance Circuit Calculations
Two formulas are required for calculating the net resistance of multiple resistive devices wired together.

Series Circuits
When multiple devices are wired in Series then use the following formula:

Rtotal = R1 + R2 + R3 + R...
The total resistance is the sum of each resistance.

Example:
A circuit with four 2-Ohm loads wired in Series has a total resistance of: 2 + 2 + 2 + 2 = 8 Ohms

Parallel Circuits
When multiple resistive devices are wired in parallel, the formula is slightly more complex:

1/Rtotal = 1/R1 + 1/R2 + 1/R3 + 1/R...

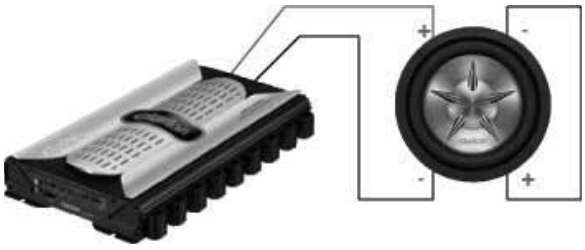
This is know as calculating the sum of reciprocal resistances.

Example:
A circuit with four 8-Ohm loads wired in parallel has a total resistance of:

1 / ((1/8)+(1/8)+(1/8)+(1/8) = 2 Ohms

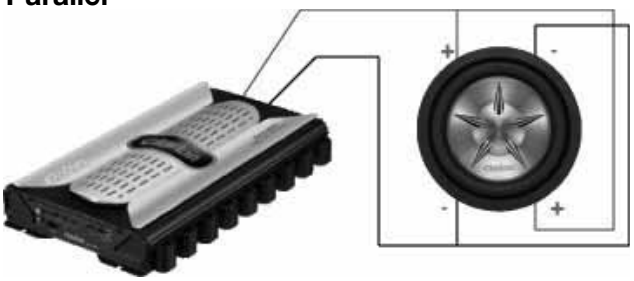
Circuit wiring Descriptions
So how do you wire a device (most commonly a speaker) in series or parallel? The drawings below described each method.

Series



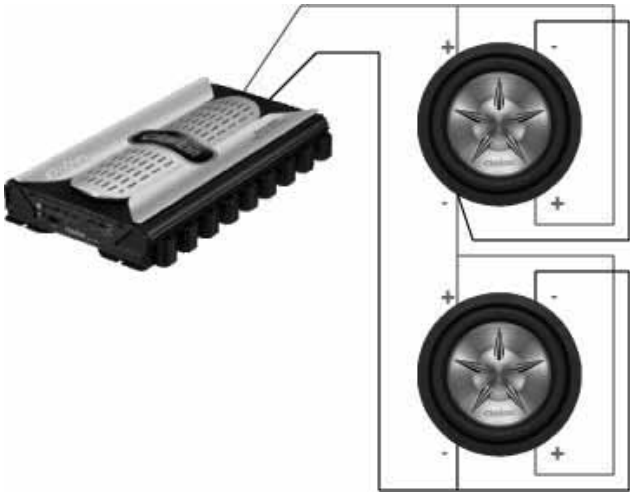
The example above shows a Dual Voice Coil subwoofer with both voice coils wired in series. If this were a PXW1051 with dual 2 Ohm voice coils, the net load would be 4 Ohms. If this was a PXW1051, with dual 4 Ohm voice coils, the net load would be 8 Ohms.

Parallel



The example above shows a Dual Voice Coil subwoofer with both voice coils wired in parallel. The two positive connections are both connected to the positive terminal of the amplifier and both negative connections are connected to the negative terminal of the amplifier. If this were a PXW1051 with dual 2 Ohm voice coils, the load would be 1 Ohm, if this was a PXW1052 with duial 4 Ohm voice coils the net load would be 2 Ohms.

Series Parallel
This example is more complex. When multiple drivers are in use, you can wire each driver using series or parallel, then wire the set of drivers in either series or parallel. When multiple drivers are being used, Clarion recommends wiring each speaker in series with the other. In the unlikely event of a speaker failure, this provides the most protection against further damage.



In this example, if we are using two PXW1051 subwoofers, the net load would be 2 Ohms. If these were PXW1052 subwoofer, the load would

Passive Crossovers

When connecting multiple speakers to an amplifier, passive crossover components are often required to filter the signal going to each speaker. For example, if you connect a midrange and a tweeter, you don't want bass to go to the tweeter and you don't want highs to go to the midrange. Similarly, if you bridge a woofer to a two channel amp and a set of full-range speakers, you only want bass to be heard from the woofer and only mids and highs from the full-range speakers. This section will describe how to calculate the appropriate component (capacitor or inductor) values to build these systems.

Nomenclature

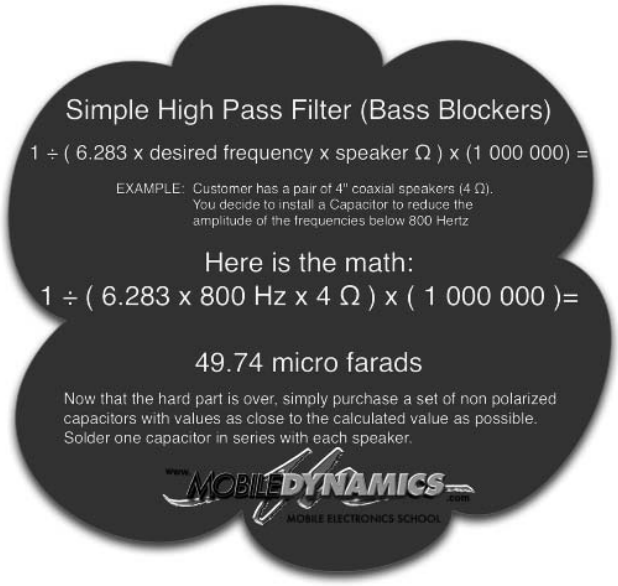
Capacitors have two ratings - a capacitance value and a voltage. The amount of energy storage in a capacitor is measured in Farads. Since the Farad is a very large unit, most capacitors, especially those used in filter circuits are measured in 1 millionth of a farad, or a microfarad. The greek letter mu (μ) is used to describe micro:

1μF = 1/1,000,000 of a Farad and is pronounced 1 microFarad.

Common values for filter capacitors range between 1μF and 250μF
Inductors are rated in Henries. Again, this is a very large unit of measurement, and in filter networks, we use 1 thousanth of a Henry or a milliHenry.

1mH = 1/1000 of a Henry and is pronounced 1 milliHenry

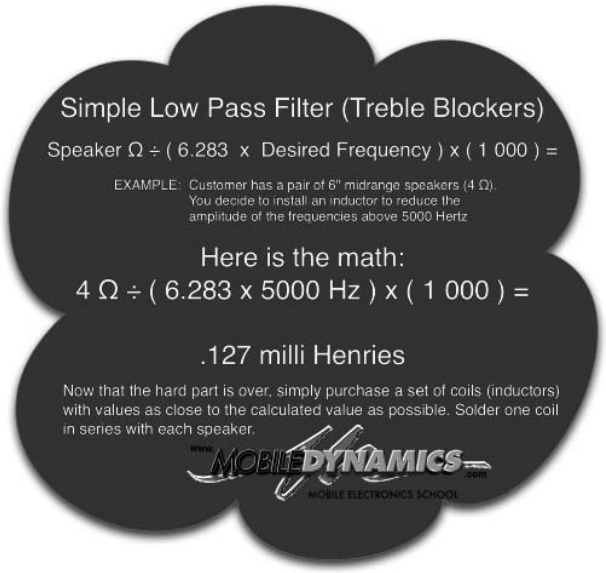
High-Pass filters


Simple High Pass Filter (Bass Blockers)
1 ÷ (6.283 x desired frequency x speaker Ω) x (1 000 000) =
EXAMPLE: Customer has a pair of 4" coaxial speakers (4 Ω).
You decide to install a Capacitor to reduce the
amplitude of the frequencies below 800 Hertz
Here is the math:
1 ÷ (6.283 x 800 Hz x 4 Ω) x (1 000 000)=
49.74 micro farads
Now that the hard part is over, simply purchase a set of non polarized
capacitors with values as close to the calculated value as possible.
Solder one capacitor in series with each speaker.
MOBILEDYNAMICS
MOBILE ELECTRONICS SCHOOL

A high-pass filter allows only frequencies higher than the selected crossover point to pass through the circuit. We use non-polarized capacitors wired in series with the load to create these filter networks. The equation above outlines how to calculate the correct component value. The chart below outlines common capacitor values for common speakers sizes in a 4 Ohm impednace. Load impedance is ciritcally important to passive crossover component value. If you change the impedance, you need to recalculate the component value.

Speaker Size	Capacitor
6x9, 6x8	250 μF
6.5, 5x7	200 μF
5.25	150 μF
4, 4x6	100 μF
3.5	47μF
Tweeter	3.3μF

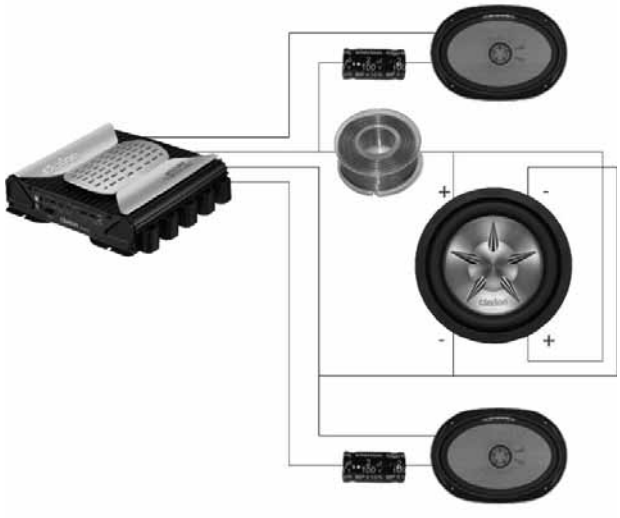
Low-Pass filter


Simple Low Pass Filter (Treble Blockers)
Speaker Ω ÷ (6.283 x Desired Frequency) x (1 000) =
EXAMPLE: Customer has a pair of 6" midrange speakers (4 Ω).
You decide to install an inductor to reduce the
amplitude of the frequencies above 5000 Hertz
Here is the math:
4 Ω ÷ (6.283 x 5000 Hz) x (1 000) =
.127 milli Henries
Now that the hard part is over, simply purchase a set of coils (inductors)
with values as close to the calculated value as possible. Solder one coil
in series with each speaker.
MOBILE DYNAMICS
MOBILE ELECTRONICS SCHOOL

Not surprisingly, a low-pass filter allows only those frequencies below the selected crossover point to pass un-attenuated. Low-Pass filters are typically used with subwoofers, as you don't want mids and highs to be reproduced.

In car audio, we use an inductor (also called a choke) as a low-pass filter. The formula above allows you to calculate the appropriate inductor value. For most single 4 Ohm subwoofers, a 6.0 or 6.6mH inductor works well.

Passive Crossover Wiring - Mixed mode



Combinations of high- and low-pass filters can be combined amongst different speakers. This is commonly used when wiring mixed-mode systems. The illustration below shows the wiring drawing for a pair of 6x9 speakers and a subwoofer on a single two channel amplifier. The subwoofer would be connected to the bridged terminals and the 6x9s would be wired in stereo. Using the crossover information provided previously, we would use a 250uF capacitor on each 6x9 and a 6.6mH inductor on the subwoofer.

In application, wether the passive component is installed on the positive wire or the negative, it will have no effect on the performance of the circuit. However, it is common to wire all speakers in the same fashion for simplicity and to make troubleshooting and adjustments later on.

Subwoofer Enclosure Guide

Even the most expensive, complex subwoofer on the planet won't sound good unless it is installed in a properly designed and constructed enclosure. The following section outlines subwoofer enclosure design and construction guidelines.

Construction Notes

All enclosure should be constructed of 3/4" thickness North American-produced MDF or high-quality plywood with one finished side (installed facing the inside of the enclosure). The use of particle board will result in substandard performance and could potentially lead to premature speaker failure.

• All enclosure joints must be secured with screws or nails.

• Wood glue (or equivalent) must be used along the edges of all joints.

• All panel joints should be sealed with appropriate caulking material - latex or rope caulk. Do not use Silicone sealant - the gases that are released during the curing process may be harmful to the adhesives used to assemble a subwoofer.

• Large panels should be reinforced with an internal brace to reduce panel flexing due to the pressures created inside the speaker cabinet. Likewise, around the mounting face of the subwoofer, braces should run from the front panel to the rear panel of the enclosure to further strengthen it.

• Clarion does not recommend the use of passive crossover components with our subwoofers (Inductors or Chokes). We recommend that a dedicated subwoofer amplifier with an integrated electronic crossover be used to achieve maximum performance from the sub-bass system.

• Where applicable, Clarion recommends the use of a subsonic filter in ported enclosure applications.

When calculating enclosure volumes, please remember to include the volume of the subwoofer, the vent(s) and/or brace(s) in your calculations.

• For optimal performance from your subwoofer enclosure, the ideal ratio of Width to Height to Depth should ideally match the Greek Golden Rectangle ratio of W=1.0, D=0.618 and H=1.618. This ratio of dimensions results in a reduction of standing waves inside the enclosure and the best possible sonic performance.

• Where applicable, the inside and outside edge of all vents should be rounded over (radiussed) to smooth airflow over the edge of the vent. This can be done with a router and a round-over bit. The use of Aeroports (or equivalent) also work very well.

Subwoofer Enclosure Application Chart

There are many different styles of subwoofer enclosures - sealed, vented, bandpass, transmission line, aperiodic, isobaric and multi-chamber vented - just to name a few.

Each enclosure has different strengths, characteristics and weaknesses. The chart below provides a generalised overview of the differences between some of the most common enclosures. Clarion recommends the use of Sealed (Acoustic Suspension) or Vented (Bass Reflex) enclosure for our subwoofers. These enclosures are the easiest to design, offers the best dynamic and transient response characteristics and is the most tolerance of design and construction errors - bottom line, they always sound great!

Enclosure Type	Sealed	Vented	Bandpass
Power Handling	Good at all Frequencies	Good above Tuning Frequency	Good near Tuning Frequency
Linearity	Excellent	Good	Poor
Dynamic Performance	Excellent	Good	Poor
Efficiency	Good	Very Good	Excellent
Subsonic Output	Excellent	Good	Good
Midbass Output	Excellent	Very Good	Poor
Enclosure Size	Small	Medium	Large

Subwoofer Enclosure Calculations
Clarion offers an extensive line of high quality, product specific subwoofer enclosures. Clarion dealers will, on occasion, be called upon to custom build a subwoofer enclosure from scratch to better maximise the space inside a vehicle, provide room for additional speakers, integrate an elaborate amp rack or to perform a completely custom installed. The following instructions outline the steps required to design a custom-sized subwoofer enclosure.

Step 1: Measurements
The first step is to take careful measurements of the vehicle in which you want to build the enclosure. You must measure the maximum width, height and depth, taking into consideration the ability to install the enclosure into the vehicle through the trunk/hatch opening. Also consider bracketry, seatbelt enclosure and other obstacles in the trunk.

Example:
Trunk Width: 35.0 inches
Trunk Height: 14 Inches
Desired Max Depth: 11 Inches
The Maximum desired depth and/or the trunk opening will determine just how big the enclosure can be. You can always make it smaller.

Step 2: Rough Calculation
Now that you have some basic numbers, you can calculate the maximum possible enclosure volume. Clarion strongly suggests that 3/4" or thicker MDF or good quality plywood be used for all enclosures. In our example we will use 3/4" material.

Example:
Take each dimension and subtract the wood thickness:

Internal Width: 35.0 - (2 x 0.75) = 33.5
Internal Height: 14 - (2 x 0.75) = 12.5
Internal Depth: 11.0 - (2 x 0.75) = 9.5

Multiply these numbers together to come up with an internal volume:

33.5 x 12.5 x 9.5 = 3978.125

Divide by 1728 to convert this measurement into cubic feet:

3978.125 ÷ 1728 = 2.30 ft^3
This is the largest air volume (not including woofer, port or brace displacement you can use. You can now select the subwoofers you want based on this information.

Step 3: Subwoofer Selection
Clarion subwoofer spec sheets include several popular and highly effective enclosure designs. Using the volume calculated above, you can choose any driver or combination of drivers you want to occupy this space.

Example:
In our example, we have a maximum gross volume of 2.30 cubic feet. Looking through the Application Guide - we see that a few of our options are:

The PXW1252 requires a net volume of 1.7 cubic feet in a ported enclosure.

Two PXW1252 woofers require a net volume of 1.6 cubic feet in a sealed enclosure

Two PXW1052 require a net volume of 2.0 cubic feet in a ported enclosure.

Three PXW1052 subwoofers require a net volume of 1.5 cubic feet in a sealed enclosure.

One PXW1552 requires a net volume of 1.5 cubic feet in a sealed enclosure

We'll go with a pair of PXW1052 drivers in a vented enclosure.

Step 4: Final Volume Calculations
Knowing the maximum width and height of the enclosure, so we can modify the depth of the enclosure to create the perfect net internal volume.

Example - Vent Volume
The vent volume calculation goes as follows:
The spec sheet outlines the need for two vents, each with an internal diameter of 2.5 inches each with a length of 8.25 inches. To calculate the volume of each vent, we need to determine how much space those vents will occupy in the enclosure:

Area of a circle formula: R2 = 3.1416 x R x R
Where R is the radius of the outside of the vent. Most round vents are made of ABS plastic drainage pipe with a wall thickness of 0.125 - 0.25 inches. For a 2.5" pipe, the outside diameter would be approximately 2.75 inches.
Part of the vent extends through the face of the enclosure, so we can subtract the thickness of the front panel of the enclosure from the volume calculation.

3.1416 x 1.375 x 1.375 x (8.25 - 0.75) = 44.546 cubic inches.

We have two vents, so we double that volume:

44.546 x 2 = 89.09 cubic inches
Then convert back to cubic feet:
88.03 ÷ 1728 = 0.05 cubic feet.

Example - Total Volume
We need to add the air volume required to the displacement of any objects inside the enclosure.

Here are the items we need to consider:

Net Air volume: 2.0 cubic feet
Driver displacement: 0.12 cubic feet each
Vent Displacement: 0.05 cubic feet total

Total air volume = 2.0 + 0.12 + 0.12 + 0.05 = 2.29 cubic feet.

For this example, the dimensions are within 1% of the target volume, and we can use the 35 x 14 x 11 dimensions.

Step 4a: Alternate Volume Calculations
If we needed a smaller volume, let's say 1.5 cubic feet gross air space, then the enclosure dimension calculation would go as follows:

Convert cubic feet to cubic inches:
1.5 x 1728 = 2592 cubic inches.

Divide by internal height:
2592 ÷ 12.5 = 207.36

Divide by internal width:
207.36 ÷ 33.5 = 6.189

6.189 is the internal depth of the enclosure. Add the thickness of the front and rear panels and you have the outside depth of the enclosure:

6.189 + 0.75 + 0.75 = 7.689

You may need to massage the width or height dimensions of the enclosure to provide adequate mounting depth and port clearance for your design. You can alter any dimension necessary to achieve the desired result.

Amplifier Installation

When installing an amplifier in a modern vehicle, careful consideration needs to be paid to power wire connections. High power amplifiers can easily consume significant amounts of current - easily exceeding 100A+ of current.

Wiring Protection

It is paramount that any power wire run through the car, be it a large gauge cable to power and amplifier or a small wire to power an accessory such as an overhead monitor, be fused.

Imagine the following scenario - a large audio system is installed in a vehicle - a 2 AWG power cable is run from the battery to a distribution block at the rear of the car. The car gets into an accident - it is T-Boned on the side of the car the power wire runs down. The impact pinches the power, shorting it directly to ground. This could result in the battery exploding or at least, wires melting and catching fire.

Clarion recommends the use of an ANL or AGU fuse holder on all power wires. When connecting any cable to the battery, a fuse must be installed within 8 inches of the battery terminal. Clarion does not recommend the use of circuit breakers. Their failure mode (what happens when the device does not operate as intended) does not guarantee that the circuit will be protected in the event of a short circuit.

Power Cable Sizing

Proper power wire sizing is paramount in allowing an amplifier to make its rated power. The chart below outlines the power cable requirements to a single amplifier.

Ground Connections

When installing an amplifier, it is paramount that the ground connection and path back to the battery and alternator be capable of handling even more current than the audio system will utilize. The reason is that the factory electrical system (lights, fans, computers, sensors, ignition system, etc) is already using these connections to operate the vehicle. Any cable you add to the positive circuitry, will need to be added to the ground path at the same time. The most important of which is the cable running from the negative terminal of the battery to the ground on the chassis.

On many new vehicles, the body and chassis panels are not welded together, but instead glued using high strength epoxies. These connections will not pass current - making the chassis of the car unsuitable for grounding an amplifier. Clarion strongly recommends running a cable of equal size to that of the power wire to the negative terminal of the amplifier. You may choose to use a distribution block at the rear of the car and connect to the chassis as well.

If you run a 4 AWG power cable to an amplifier, run a 4 AWG ground cable at the same time. This will allow for significantly increased current carrying capacity, result in less voltage drop and allow your amplifiers to produce more power.

Cable size by Power and Distance

RMS Watts	4 Feet	8 Feet	12 feet	16 Feet	20 Feet
100	10 AWG	10 AWG	8 AWG	8 AWG	4 AWG
200	10 AWG	8 AWG	8 AWG	4 AWG	4 AWG
400	8 AWG	8 AWG	4 AWG	4 AWG	4 AWG
600	8 AWG	4 AWG	4 AWG	4 AWG	4 AWG
800	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG
1000	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG
1500	4 AWG	2 AWG	2 AWG	1/0 AWG	1/0 AWG